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Federal Trade Commission

Trade Regulations: Labeling and Advertising of Home Insulation

FEDERAL TRADE COMMISSION

16 CFR Part 460

Trade Regulation Rules; Labeling and Advertising of Home Insulation

AGENCY: Federal Trade Commission.

ACTION: Final trade regulation rule.

SUMMARY: The Federal Trade Commission issues a final rule which prescribes standardized test methods for determining the R-values of home insulation materials; mandates prepurchase point-of-sale disclosure of R-values and related information to consumers; requires disclosures in certain types of advertisements for home insulation; and requires substantiation and qualifying disclosures in connection with energy savings claims. The rule is designed to enable consumers to evaluate and compare the thermal performance characteristics of these materials, and to ensure that promotional claims for home insulation products will be fair and nondeceptive.

EFFECTIVE DATE: November 30, 1979.

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SUPPLEMENTARY INFORMATION:

Statement of Basis and Purpose

I. Introduction

A. *Overview of the Rule.* Insulation can be a very significant energy conservation measure. Its insulating capacity can be measured only by its R-value, which signifies the insulation's degree of resistance to the flow of heat. No other piece of information can tell the consumer how the insulation is likely to perform as an insulator, and whether the cost of the insulation is justified. Yet the record demonstrates that the home insulation market has frequently failed to provide this crucial information to consumers. In the Commission's opinion, the industry's failure systematically to provide R-value information prior to sale is both an unfair and deceptive practice within the meaning of Section 5 of the Federal Trade Commission Act.

The primary purpose of the Rule being promulgated today is to correct the failure of the home insulation marketplace to provide this essential pre-purchase information to the consumer. The information will give consumers an opportunity to compare relative insulating efficiencies, to select the product with the greatest efficiency and potential for energy savings, to make a cost-effective purchase, and to consider the main variables limiting insulation effectiveness and realization of claimed energy savings.

The Rule mandates that specific R-value information for home insulation products be disclosed in certain ads and at the point of sale. The purpose of the R-value disclosure requirement for advertising is to prevent consumers from being misled by certain claims which have a bearing on insulating value. At the point of transaction, some consumers will be able to get the requisite R-value information from the label on the insulation package. However, since the evidence shows that packages are often unavailable for inspection prior to purchase, no labeled information would be available to consumers in many instances. As a result, the Rule requires that a fact sheet be available to consumers for inspection before they make their purchase.

In general the fact sheets and labels for each insulation product disclose the same basic kind of information about R-value. The fact sheet also gives consumers further information that has an important bearing on how they should assess their insulation needs and their likely fuel savings from insulation. The Commission believes that these additional disclosures are necessary to prevent deception and to allow consumers to make rational, well-informed choices in their insulation purchases.

The Rule also requires that R-value disclosures be accompanied by a brief explanation that R-value is a measure of insulating power; the higher the R-value, the greater the insulating power. Since the evidence shows that many consumers are unfamiliar with the concept—in part because the industry has failed to promote it—the Commission believes that an explanation of the term is needed to compensate for this market deficiency and thereby to ensure that consumers will benefit from the prescribed R-value information.

To ensure that consumers are provided with accurate and comparable R-value information, the Rule requires that R-values be determined scientifically in accordance with standard test methods published by the American Society of Testing and Materials ("ASTM"), a private standards-setting organization. Most types of home insulation can be tested at a reasonable cost using one of several permissible procedures. Because R-values per unit for most insulation materials are non-linear, and actually decrease significantly with increases in thickness up to a point, R-values must be determined either at a product's installed or "representative" thickness. The latter is the point at which the adverse effect of thickness on R-value becomes insignificant.

The other major provision of the Rule addresses energy savings and other promotional claims for home insulation products, including tax benefit and government certification claims. Claims that a product is certified or qualifies for a tax benefit are prohibited unless true. Since the amount of energy and money that can be saved by insulation is affected by a number of factors unrelated to the performance of the insulation itself, the Rule provides that energy savings must be substantiated and accompanied by a short disclaimer that savings will depend on the consumers' particular circumstances.

This discussion has highlighted the central elements of the Rule. Virtually all other provisions of the Rule are designed to ensure the integrity of this disclosure scheme. Since determining that a rule was necessary to eliminate consumer abuses in the home insulation industry, the Commission's overriding objective has been to fashion a rule that protects the consumer while minimizing the impact of compliance on the insulation industry which, while economically concentrated in the hands of a few producers, is also comprised of hundreds of relatively small businesses. The Commission believes that this Rule, one that has been tightened considerably from the original proposals, represents a reasonable and sustainable effort toward meeting this objective.

B. *Background.* On November 18, 1977, the Federal Trade Commission published in the **Federal Register** a proposed trade regulation rule governing the labeling and advertising of residential thermal insulation materials.(*1*) Shortages in fuel supplies and rising fuel prices had resulted in a dramatic increase in insulation purchases by consumers. As a result, the Commission found, pursuant to its Rules of Practice,(*2*) that the public interest required the use of expeditious procedures for this rulemaking.(*3*) The use of these procedures, coupled with the generally cooperative attitude of the rulemaking participants,(*4*) resulted in Commission consideration of the rule approximately one year after it was proposed.

Interested persons were invited to submit written comments during the two months following publication of the proposed rule.(*5*) Hearings were then held in Washington, D.C. from February

13 to March 9, 1978,(6) followed by a 30-day period during which the participants were permitted to comment on the hearing record.(7)

A wide variety of parties contributed to the record, both in writing and in oral testimony. At the hearings, approximately 50 witnesses represented manufacturers of all types of home insulation, retailers, installers, trade associations, testing laboratories and organizations, consumer and environmental groups, and state and federal government agencies.(8) In addition to the Commission's staff, nine group representatives were permitted to examine and cross-examine all witnesses.(9)

In July of 1978, approximately three months after the close of the rebuttal period, the rulemaking staff published its report analyzing the record evidence and recommending a final rule.(10) In August of 1978, the Presiding Officer published his report, noting several areas of disagreement with the staff's recommendations.(11) The procedures adopted by the Commission for this rulemaking called for 30 days of public comment following the publication of the Presiding Officer's report.(12) To ensure that all interested persons would have a full opportunity to comment on the recommended rule, however, the public was invited to submit comments immediately following publication of the staff's report in July of 1978.(13) The availability of the Presiding Officer's report was announced in August.(14) When the public comment period closed on September 22, 1978, more than 100 written comments had been received.(15)

At the close of this comment period, the Commission convened a special meeting to permit interested persons to make direct presentations to the Commissioners themselves.(16) After carefully considering the rulemaking record as a whole, the Commission has voted to promulgate a trade regulation rule governing the labeling and advertising of home insulation.

C. *Description of the Industry.* Home insulation is manufactured and sold in a variety of forms. All "mass" insulations(17) are made of solid materials—either cellular, granular, or fibrous—and are heterogeneous in nature. Gas-filled voids within these solid materials retard the flow of heat. The effectiveness of the material in retarding heat flow is measured by its "R-value." (18) The higher the R-value, the greater the insulation's resistance to heat flow.(19)

The types of insulation covered by this rule are mineral wool (fiberglass and rock wool), cellulose, cellular plastics (urea-formaldehyde foam, polystyrene, polyurethane, and polyisocyanurate), vermiculite, perlite, and reflective (aluminum foil). These materials are produced in loose-fill, formed-in-place, flexible or semirigid, and rigid forms.(20)

Fiberglass and rock wool are produced in batt, blanket, and loose-fill forms for new construction and retrofit(21) applications in ceilings, walls, and floors.(22) Cellulose is a loose-fill made from shredded waste paper, to which flame retardant chemicals are added. It is used in the ceilings of new houses, and in the ceilings and wall cavities of existing structures.(23) Vermiculite and perlite are granular loose-fill materials. They are used primarily in attics and wall cavities, and in the hollow cores of masonry block walls.(24)

Cellular plastics are low-density foams which are either manufactured as insulating boards at the factory, or foamed-in-place at the application site. Polystyrene, polyurethane, and polyisocyanurate typically are produced in rigid board form, and are used in new home construction as exterior sheathing and wall and siding insulation.(25) Urea-formaldehyde foam can be produced only through a foaming instrument at the site of application. Thus, its primary use is in insulating the enclosed wall cavities of existing houses.(26)

Reflective materials, primarily aluminum foil, are generally used to insulate residential walls and floors, often in combination with mass insulations. They are commonly found as facings on mineral wool batts and blankets or exterior sheathing materials, and on gypsum board for dry wall.(27) In addition, foil insulation is manufactured in an expandable, accordion-like foam, in which two or more sheets of foil are separated by air spaces.(28) Unlike mass insulations, the thermal resistance of reflective foil is not provided by the material itself. Rather, insulating ability is provided by installing the foil adjacent to an airspace, significantly increasing the thermal resistance of the airspace itself.(29)

The three manufacturers of fiberglass account for approximately two-thirds of the insulation currently sold for residential uses.(30) Cellulose producers, who number in the hundreds, hold a substantial share of the remaining third.(31) Rock wool and urea-formaldehyde foam account for most of the rest, with other products holding very small market shares.(32)

D. *Factors Affecting Insulation Performance.* There are a number of testing procedures available to provide a laboratory measurement of an insulation's R-value.(33) These tested R-values are not always representative of in-use effectiveness, however, because there are a variety of factors which can affect the thermal performance of an insulation material. Some of these factors are inherent in the nature of the insulation product. In other cases, environmental and installation-related occurrences can change the R-value of the insulation.

1. *Thickness.* In general, the thicker an insulating material is, the better it resists the flow of heat.(34) However, the record demonstrates that, for most mass insulations, the relationship between thickness and thermal performance is not linear.(35) In other words, the tested R-value of a one-inch sample of insulation cannot simply be multiplied by six in order to obtain the total R-value for six inches of the material. For almost all insulations, the R-value produced by such a multiplication process, which is based on an assumption of linearity, will be too high.(36) This "thickness effect" eventually levels off, usually at a thickness of approximately three or four inches.(37) As a result, the record reflects strong scientific agreement that in any reliable measurement of thermal performance, the material must be evaluated either at the thickness at which it is to be used or at a thickness beyond which the R-value per unit will remain constant despite increases in thickness (the "representative thickness").(38)

2. *Temperature.* Normally, the R-value of any mass insulation decreases as the temperature to which it is exposed rises.(39) The record demonstrates that the effect of temperature upon R-value will be about the same for all mass insulations, and that this effect can be substantial.(40) To account for this temperature effect, most members of the insulation industry use a mean temperature of 75° Fahrenheit for all R-value testing.(41) Federal purchasing specifications for insulation also prescribe a mean test temperature of 75° Fahrenheit.(42) While it is generally recognized that 75° Fahrenheit is not representative of all environmental conditions across the country,(43) this is the standard test temperature which the industry has long used to permit R-value comparisons.

3. *Aging.* For certain cellular plastics insulations, the R-value of the product will change as the material ages.(44) This aging process affects polyurethane, polyisocyanurate, and extruded polystyrene.(45) During the first few years of use, exposure of these insulations to the environment results in

a release of certain gases, lowering the R-value of the products significantly.(*46*) Thus, if the product is tested immediately after manufacture, its R-value will be much higher than it would be in actual use.(*47*) To account for this effect, some manufacturers test their products for R-value several years after the insulation has been manufactured.(*48*) Others test for R-value after subjecting their products to an "accelerated aging" process, which simulates years of aging during a three-month period.(*49*)

4. *Compression.* Compression is a problem peculiar to flexible insulation, and is particularly a problem with respect to air duct insulation. For example, compression of a mineral wool batt increases its density, thus lowering its thermal resistance.(*50*) In the case of batt insulation, the product is generally compressed during installation so that it will fit snugly between the studs in attic or wall cavities. Following installation, however, the product will generally spring back to its original thickness and R-value. Air duct insulation presents a different problem. This flexible product is wrapped around rectangular air ducts and then sealed. Thus, the insulation is compressed when it is folded at the edges of the duct, and is compressed further when it is taped. This compression results in a reduction of the product's tested R-value.(*51*)

5. *Settling.* In general, the material particles of all loose-fill insulations tend to settle after being installed in open or unconfined areas such as attics.(*52*) The particles also will settle when blown into a confined area, such as an enclosed wall cavity, if they are not sufficiently compressed during installation.(*53*) As the particles settle, the insulation becomes more dense and also loses some of its depth or height. Any settling of a loose-fill insulation reduces the R-value of the area in which it is installed.(*54*)

Industry members generally agreed that all loose-fill should be tested for R-value at the "settled density" of the product, *i.e.*, the density to which the product can be expected to settle over time.(*55*) As is the case with aging, loose-fill R-values based on tests that take settling into account will more accurately reflect the actual thermal performance of the product over time.(*56*) Although there is no generally accepted settled density test for loose-fill mineral wool insulation,(*57*) the federal purchasing specification for cellulose insulation requires that R-values be based on testing performed at the settled density of the product.(*58*) This specification provides detailed procedures for determining the settled density of any cellulosic insulation.(*59*)

6. *Shrinkage.* The inherent properties of urea-based foam insulation will interact after application to cause the material to lose volume, or "shrink," thereby leaving the wall partially uninsulated.(*60*) Although both the rate and extent of shrinkage are somewhat dependent on the quality of the on-site formulation and application of the urea-based foam material,(*61*) the shrinkage process itself is an independent event—an inherent characteristic of the product.(*62*) In other words, even if UF foam insulation is installed perfectly, the material will still shrink.

During the curing period and succeeding stages of shrinkage, the UF foam material will pull away from the wall cavity in all three directions—namely, at the sides, at the ends, and at both the top and the bottom of the "cube" formed by the wall cavity. The resulting gaps between the foam and the cavity walls and studs create a continuum of airspaces in the cavity that may encompass the insulating material. The size and position of these airspaces, and the extent of the resulting loss in insulating efficiency, will depend upon the severity of the shrinkage that occurs.(*63*)

The record indicates that it is extremely difficult to state a typical amount of UF foam shrinkage during and beyond the curing period.(*64*) Nevertheless, a substantial body of laboratory and field data has been generated on the subject. In the United States, the National Bureau of Standards (NBS) observed shrinkage of 8.1 percent over a two-year period after UF foam insulation had been installed in a test house.(*65*) The Department of Housing and Urban Development concluded from field observations that shrinkage of UF foam ranges between 1 and 11 percent, and averages about 6 percent.(*66*) Canada's National Research Council conducted field observations and reported that long-term shrinkage of UF foam varies between 5 and 10 percent, with the average rate of shrinkage being 7 percent.(*67*) Governmental bodies in Europe have also concluded that UF foam shrinkage ranges between 4 and 8 percent.(*68*) Other studies in the record confirm these findings.(*69*)

The UF foam insulation industry contends that these shrinkage findings are exaggerated, and that excessive shrinkage is invariably due to improper installation of the material.(*70*) Yet, even UF foam industry members conceded that the product shrinks between 1 and 3 percent (*71*) or 1 and 4 percent (*72*) under normal conditions. Moreover, studies submitted by these industry members reveal instances in which shrinkage of properly installed foam insulation has exceeded these levels.(*73*)

Taken as a whole, the record evidence shows that UF foam insulation invariably shrinks after application, and that the shrinkage has reached levels of 5 percent and above in a broad range of field studies. These shrinkage levels may occur even in the absence of installation problems, which are known to exacerbate the shrinkage problem.(*73a*)

The process of shrinkage reduces the effective thermal resistance of UF foam insulation by creating void spaces around the foam in the wall cavity.(*74*) Heat loss occurs through these void spaces,(*75*) and additional heat loss occurs as a result of movement of air throughout the continuum of void spaces that may encompass the UF foam cube.(*76*) The record establishes that the process of shrinkage reduces the effective thermal resistance of the UF foam-filled cavity below the R-value of the foam itself as measured under laboratory conditions.(*77*) Industry members do not dispute this conclusion.(*78*)

Nevertheless, there is considerable dispute regarding the extent of the loss in insulating efficiency caused by UF foam shrinkage. Actual heat loss measurements and laboratory tests performed by both NBS and the Canadian government have shown reductions in thermal resistance of 40 and 50 percent after shrinkage of UF foam insulation in wall cavities.(*79*) In addition, some governmental bodies have employed standard engineering calculations to determine the reduction in thermal resistance caused by shrinkage. The Department of Housing and Urban Development calculated that the effective R-value of UF foam insulation is 28 percent lower than its laboratory R-value, if shrinkage is on the order of 6 percent.(*80*) The Canadian government, assuming a shrinkage rate of 7 percent, confirmed its 40 percent "derating" (*81*) of UF foam R-values by similar engineering calculations.(*82*)

The UF foam industry contends that the specific R-value deratings assigned to its product by NBS, HUD, Canada, and others are exaggerated.(*83*) Nevertheless, the industry generally concedes that shrinkage reduces the effective R-value of a UF foam-filled wall cavity in the neighborhood of 12 to 15 percent.(*84*)

Based on the record evidence taken as a whole, the Commission concludes that UF foam insulations shrink, and that the shrinkage can significantly reduce the R-value of the insulated area.

II. Unfair and Deceptive Acts and Practices in the Home Insulation Market

A. *Characteristics of the Home Insulation Market.* As fuel prices have climbed in recent years, insulation has become an increasingly attractive investment for consumers. In addition, governmental activities have promoted insulation purchases. Because of the important role that insulation can play in conserving energy, the President's National Energy Plan set as its goal that 90 percent of all homes be insulated by 1985.(*85*) Attainment of this goal will require insulation purchases by several million homeowners each year.(*86*)

To encourage these purchases, Congress passed a sizable tax credit for consumers who buy insulation or other energy conservation measures.(*87*) Congress also has mandated a comprehensive program under which utility companies will promote energy conservation purchases.(*88*) Under this program, virtually every homeowner in the country will receive a brochure from the local utility company. These brochures will urge consumers to purchase insulation and other energy conservation products, and will contain estimates of the savings associated with such products. The utilities also will make available, at the request of any homeowner, individualized energy audits and specific recommendations for conservation purchases. They will provide lists of lending institutions, as well as contractors and suppliers of the various products, and will offer to arrange for the installation and financing of products purchased by the homeowner. In short, through this program, the federal government will be playing a pivotal role in efforts to encourage the purchase of insulation and other energy conservation measures.

Governmental bodies have also promoted insulation purchases in other ways. In recent years, numerous federal and state agencies have issued pamphlets recommending the addition of insulation to existing homes.(*89*) A federal low-income weatherization program administered by the Department of Energy funds state-run programs under which houses owned by low-income persons are insulated.(*90*) With respect to new housing, both the Farmers Home Administration and the Department of Housing and Urban Development have issued revised minimum property standards for federally-assisted housing.(*91*) The result of these revisions is an increase in the amount of insulation required in new homes.

In light of the rising fuel prices and active governmental intervention in the home insulation market, it is not surprising that nearly eight million homeowners had some insulation installed or added between 1974 and 1976.(*92*) In the first half of 1977 alone, three million homeowners added insulation to their homes.(*93*) Approximately 70 percent of the insulation being added to existing homes is installed by do-it-yourself consumers,(*94*) who generally buy their insulation through retail hardware and department stores.(*95*) Insulation is sold and installed in the remaining 30 percent of the retrofit market by seven to ten thousand contractors across the country.(*96*) and is sold or financed by a growing number of utility companies.(*97*)

Insulation is also acquired by consumers through the purchase of a new home. Housing starts in 1977 were at their highest level in several years, and the average amount of insulation being placed in each new home continued to rise.(*98*) Not surprisingly, the record shows that purchasers of new homes are increasingly attentive to energy efficiency as a critical feature of the home.(*99*) One survey showed that most new home buyers are willing to spend additional money for insulation when advised to do so by builders.(*100*)

Despite the enormous numbers of home insulation purchasers in the market today, it appears that most consumers know very little about available insulating materials and the factors that should affect any purchasing decision. Consumers have a general awareness of insulation and of the energy-saving benefits it can provide, but they are largely uninformed about insulation effectiveness. There are several obvious reasons for this state of affairs. Home insulation is an expensive product, which is purchased very rarely by homeowners.(*101*) Thus, consumers are unable to learn through repetitive purchases how effective the various insulation products are. Moreover, insulation is not the kind of product that can be readily evaluated even by relatively knowledgeable consumers. It is not possible to determine prior to purchase how the insulation material will perform, since insulation effectiveness must be measured by scientific test methods.(*102*) Similarly, after the product has been installed, the consumer has no practical way of determining whether the insulation has been installed properly to attain the desired level of effectiveness; further, the number of variables affecting home energy consumption—e.g., climate, type of dwelling, and lifestyle—make it virtually impossible for the consumer to assess whether the insulation is having any impact on the home's energy consumption, or what the impact is.(*103*) In sum, home insulation is a "credence good" because prospective purchasers do not have the sophistication, the resources, or the opportunity to evaluate its likely effectiveness or impact on energy consumption either prior or subsequent to their purchasing decisions.

B. *Unfair and Deceptive Acts and Practices.* 1. *Insulation R-values.* Since consumers cannot independently determine the effectiveness of home insulation, they need to be informed of some product feature or features that they can rely on to provide them with information concerning the material's effectiveness. The central component of the rule initially proposed by the Commission was the requirement that consumers be told, prior to purchase, the R-value of home insulation materials.(*104*) This proposal was based on the Commission's belief that R-value was that one significant piece of information that measures insulation effectiveness and without which consumers cannot make rational purchasing decisions.(*105*) In other words, the Commission believed that R-value was a material fact in any insulation purchasing decision.

The record overwhelmingly bears out this early belief.(*106*) It demonstrates that the R-value of an insulation material is the only existing measurement that enables the consumer to compare the thermal performance of competing insulations.(*107*) Thickness cannot serve as the appropriate gauge, since three inches of one insulation may be twice as effective as three inches of another.(*108*) Similarly, price is not a useful measure of performance, since a high price is not necessarily indicative of superior insulation effectiveness.(*109*) Nor is there any other performance yardstick suited to this purpose. As one industry member put it, an insulation material's R-value "is the only quantifiable . . . measure of thermal resistance that might provide the typical consumer with a means to evaluate insulation products."(*110*)

Despite the crucial role that R-value information should play in any insulation purchasing decision, the evidence demonstrates that industry members often fail to disclose product R-values to consumers.(*111*) For example, consumer protection specialists in Arizona, California, Georgia, and New Jersey noted that few insulation ads in their respective

jurisdictions disclose product R-values.(*112*) These contentions are corroborated by record evidence of numerous ads, in both print and broadcast media, for a wide variety of insulation materials.(*113*)

Nor is this widespread failure to disclose R-values necessarily remedied when the consumer actually purchases the product. In a survey of package labels in twelve retail outlets in the Washington, D.C. area, approximately 40 percent of the labels contained no R-value disclosure.(*114*) The survey further revealed that, in half of the stores, package labels are not available for inspection prior to purchase.(*115*) Thus, even if R-value information does appear on the label, consumers may have no opportunity to use the information in reaching a purchasing decision. Indeed, a survey of Wisconsin homeowners showed that 75 percent of those interviewed had never heard of the term "R-value" as applied to home insulation.(*116*)

a. *Failure to disclose R-value as an unfair practice.* These findings illustrate a classic case of deficient market performance. Despite the established centrality of R-value to evaluating insulating performance and the absence of public or private restraints against its disclosure,(*117*) market forces have not caused industry members to generate this vital information and make it available to the consuming public. Although the record evidence provides no clear explanation for this failure of the marketplace, the conditions and incentives operating in the home insulation market may account for it.

For example, the recent past has witnessed rapid growth in the insulation industry, characterized by a dramatic influx of manufacturing and contracting firms. In many cases, these firms lacked either substantial experience in the insulating business or sensitivity to the informational needs of insulation consumers. Yet, this phenomenon can account for only part of the market failure, since there are numerous established firms that have also failed to disclose this information. The failure also could be attributable in part to the economic self-interest of sellers of low R-value products, whose success in marketing their products may depend on their ability to shift the competitive focus to some other more favorable attribute of their product. Again, however, this would account for only a portion of the failure to disclose R-values, since the record evidence demonstrates that low as well as high R-values have been disclosed on occasion.

Even for firms that are experienced and that have no incentive to withhold R-value information, the insulation market simply does not encourage the promotion of R-values. For example, the failure to disclose R-values is attributable in part to the general ignorance of consumers concerning insulation products. In other words, since many consumers do not know that R-value is the performance feature that should be evaluated in an insulation purchasing decision, there has been no market demand for R-value information. In addition, this lack of understanding on the part of consumers may mean that industry members have no incentive to attempt to promote the R-value concept. Since many consumers do not know what R-value means, an advertisement that focuses on R-value is often simply another advertisement to buy insulation. Thus, the R-value information in the ad often does not benefit the advertiser. In fact, an ad that attempts boldly to educate consumers about R-value may inure as much to the benefit of competitors as it does to that of the advertiser; a competitor with comparable R-value material will be able to exploit the consumer education paid for by the advertiser. This risk, one which no reasonable advertiser wishes to take alone, encourages industry members to focus instead on product features that consumers will understand.

Moreover, the same market forces that have operated to deprive consumers of R-value information in the past will continue to do so in the future. Buyers of low R-value products will continue to be ignorant of the significance of R-value, and therefore will not demand this information. The risk of sacrificing competitive advantage from lone attempts at R-value education will remain, encouraging industry members to focus consumer attention on other product features. More importantly, governmental intervention in the insulation market will, if anything, become more intensive in the years to come.(*118*) This intervention may be a distorting factor in the marketplace, as it has been in the past. It inflates the demand for insulation products, so that industry members gain increased sales regardless of the presence or absence of R-value information about their products.

The preceding discussion demonstrates that conditions in the home insulation market are not encouraging industry members to make R-value information available to consumers. This market failure is significant because it results in substantial injury to comsumers of home insulation products.(*119*) There are several elements of the economic injury that flow from the absence of R-value information for use in making purchasing decisions.

As noted earlier, consumers are unable to assess R-value or insulation performance on their own. They cannot ascertain the R-value of a product merely by examining it,(*120*) nor will they discover through repeat purchases the relative efficiencies of insulation products. In other words, in the absence of a seller's disclosure, consumers do not have a ready means for determining R-value, and their search costs in seeking out that information would be extraordinarily high. The imposition of this search cost on consumers is in itself a genuine economic injury, which would be prevented by the introduction of R-value information into the marketplace by those who are able to do so most efficiently.(*121*) Further, extensive consumer search is an unnecessary injury, since the R-value of any particular product is already known to each manufacturer in the ordinary course of its business.(*122*) In light of this fact, it is not surprising that the record reveals a broad consensus of industry support for the Commission's proposal for mandatory disclosure of R-values.(*123*) Thus, this is not a matter in which the Commission must weigh complicated evidence concerning the relative merits of competing objectives, or decide how much consumer injury should be sustained for the sake of preserving some industry or consumer benefit.

In addition to raising consumer search costs, the failure of sellers to disclose R-value impedes the ability of consumers to make rational purchasing decisions. The only significant reason to buy insulation is to save energy, and the only measurement that permits consumers to judge the anticipated level of thermal performance is R-value. Moreover, R-values vary significantly from product to product. Thus, unless consumers know the R-values of all available products, they are effectively deprived of any opportunity to compare relative insulating efficiencies, and to select the product with the greatest efficiency and potential for energy savings. Given the general relationship between thermal resistance and potential energy savings, the inability to comparison shop for the optimum R-value can result in purchases of insulation products that are relatively ineffective. The result is that consumers' expectations of energy savings are disappointed, and the market continues to operate in a manner that frustrates the national program of energy conservation.

There is another element of the economic injury that derives from the failure to disclose R-value information. In order to judge the economic value of an insulation product, that is, to estimate whether the purchase price will be justified by insulating performance, the consumer must know the product's R-value. The only rational way to price shop for home insulation is to determine, for each competing product, how many square feet of space can be insulated to a desired level of R-value for a stated price. Without this R-value information, consumers are deprived of a rational basis for making a very expensive economic decision, and of the opportunity to seek the lowest price at which they can obtain the level of performance they desire. The consequence of this impediment to the buying process is that consumers may make unwarranted, excessively costly insulation purchases.

Thus, the failure of the home insulation market to generate R-value information causes substantial injury to consumers. What is most significant about this injury, however, is that it occurs randomly. In the absence of R-value information, no individual consumer has any assurance that his or her insulation purchase was a rational one in light of his or her needs. Each prospective purchaser is involved in a game of chance, virtually taking it on faith that this will not be one of the randomly dispersed purchases that turns out to be erroneous. On the other hand, if R-value information is available, each consumer can determine how much energy savings to strive for, how much insulation performance to buy, and what price should be paid for that level of performance. For these reasons, the Commission believes that the failure of insulation sellers to disclose R-value information prior to purchase is unfair within the meaning of section 5 of the Federal Trade Commission Act.

The foregoing analysis is sufficient to support the Rule's provision for mandatory disclosure of R-values, because of the public policy favoring the existence and efficient functioning of free markets. A free market cannot function property in the absence of effective competition which focuses on the merits and value of competing products and services. An essential element of effective competition is the availability of information that consumers need to evaluate competing products and to make the best possible choices. This fundamental public policy of encouraging informed consumer decisions has repeatedly found expression in federal statutes requiring the disclosure of material information.(*124*) Market imperfections that impede the process of providing such material information in the regular flow of commerce discourage consumer consideration of salient product features, diminish comparison shopping, and create unwarranted competitive parity or advantage for inferior products. Thus, a market that functions in this way not only harms consumers but also lessens fair and open competition. In addition, as earlier discussion of the market disincentives for R-value disclosure illustrates, a market that functions imperfectly may by its very nature be incapable of self-correction. Given the nexus between healthy competition and consumer welfare, and considering a market's own capacity to eliminate imperfections, the test of unfairness here is whether the acts or practices at issue inhibit, and are likely to continue to inhibit, the functioning of the competitive market in a manner that causes harm to consumers.(*125*) The Commission concludes that this unfairness test is met.

It is also noteworthy that the mandatory disclosure of R-value information complements the strong public policy in favor of energy conservation.(*126*) Indeed, in light of the extensive governmental participation in the home insulation market, it is especially important for the Commission to ensure that insulation purchases are not tainted by unfairness. Thus, by enhancing competition and free commerce in the insulation market, the Commission's decision to require R-value disclosure both protects insulation consumers and furthers the nation's energy conservation goals.(*127*)

b. *Failure to disclose R-value as a deceptive practice.* The failure of insulation manufacturers to disclose product R-values is also a deceptive practice under section 5. It is an established principle of section 5 that when a consumer's normal expectations concerning a product are at odds with actual information about the product, this disparity must be corrected through disclosure.(*128*) In the context of home insulation materials, the physical attributes of the most commonly purchased products lend themselves to consideration and purchase by consumers on the basis of thickness. In addition, price is an important consideration in any insulation purchase. Although the record reflects general agreement that consumers are misled when they buy insulation on the basis of price or thickness,(*129*) their erroneous expectations are being exploited and perpetuated by current marketing practices in the industry. For example, although a scientific survey of insulation ads is not available, fully 20 percent of the ads placed on the record by staff and other parties from available media refer to thickness and/or price without disclosing the product's R-value.(*130*) As noted earlier, this limited and misleading information is not always fleshed out when consumers purchase the product.(*131*) Many labels do not disclose R-values, and labels are often unavailable for inspection prior to purchase.(*132*) Since most insulation sales are made to do-it-yourself consumers,(*133*) and since the physical attributes of the most commonly purchased materials lend themselves to purchase on the basis of thickness,(*134*) it is reasonable to conclude that a significant number of insulation purchases are being made on the basis of the product's thickness or price, with no knowledge of its R-value. Yet, the record reflects general agreement that consumers are misled when they purchase insulation on the basis of price or thickness.(*135*) For example, although a material's R-value is partly a function of its thickness, insulation R-values per unit thickness vary significantly from product to product.(*136*) Thus, a three-inch thickness of one product may provide twice as much R-value as a three-inch thickness of another. Similarly, a consumer is misled when he or she is told simply that a certain area, in square feet, can be covered with insulation at a price of $100. As the record reflects, the consumer cannot evaluate this price prior to purchase without knowing the R-value that will be attained over the area for the stated price.(*137*)

Since thickness and price are the elements upon which consumers must rely in the absence of R-value disclosures, and since the record demonstrates that consumers are misled when they purchase insulation on the basis of these factors, the Commission concludes that the failure to disclose product R-values to consumers prior to purchase is deceptive.

c. *Disclosure of R-value in a deceptive and unfair manner.* In many instances, product R-values which are claimed by industry members are exaggerated. The record contains numerous examples of ads which state R-values that greatly exceed those generally agreed to be realistic values for products in that same class.(*138*) State consumer protection officials also agreed that ads with overstated R-values are common in their respective jurisdictions.(*139*) Indeed, even some industry members conceded

that excessive R-value claims are being made to consumers.(*140*)

Moreover, even if an advertiser's R-value claims accurately reflect available test results, the conditions under which R-value testing takes place can greatly enhance the resulting R-value. Testing an insulation material at a one-inch thickness, for example, inherently produces a higher R-value than testing at greater thicknesses.(*141*) Yet, most manufacturers currently base their R-value representations on one-inch R-value testing. In fact, many manufacturers affirmatively represent their product's "R-value per inch," (*142*) clearly leading consumers to believe that insulation R-values are linear. Similarly, R-value claims based on testing at a low mean temperature, such as 35° Fahrenheit, inevitably mislead consumers.(*143*) Testing performed at this lower temperature will invariably produce a higher R-value than testing performed at the standard temperature of 75° Fahrenheit.(*144*)

Further, most manufacturers fail to reduce their claimed R-value to account for factors that are known to affect thermal performance, such as settling, shrinkage, and aging.(*145*) the result is that R-value claims for these insulation products are exaggerated.(*146*) Moreover, since the deleterious effects of settling, shrinkage, and aging vary not only among classes of products but among individual materials of the same type, the failure to reduce R-values to account for these factors effectively prevents consumers from comparing product R-values on a fair and accurate basis. Finally, if R-value information is needed for comparison purposes to make the market function effectively, as discussed earlier in this section, then it is unfair not to give R-values that reliably take these comparative differences into account. The Commission therefore concludes that these practices are both deceptive and unfair to consumers of home insulation.

d. *Failure to explain the meaning of R-value.* As noted earlier in this section, consumers are unfamiliar with the concept of insulation R-values.(*147*) Indeed, one survey showed that 75 percent of the respondents had never heard of the term "R-value" as applied to home insulation materials.(*148*) This is not entirely surprising, since virtually no ads or labels for home insulation disclose the meaning of the term.(*149*) Even if the survey finding reflects a more extreme degree of consumer ignorance than can be assumed in the population at large, it nevertheless shows that many consumers cannot benefit from the Commission's decision to require R-value disclosures unless the meaning of the term is explained to them. Moreover, the same factors that, as previously discussed, have unfairly prevented dissemination of R-values, will unfairly prevent dissemination of an R-value explanation.

As a result, the Commission has decided that R-value disclosures must be accompanied by a brief explanation of the meaning and significance of the term.(*150*) In the Commission's judgment, the R-value explanation required by the Rule is justified by the industry's past failure to educate and inform consumers about R-value, and is needed to implement the Commission's R-value disclosure scheme.(*151*)

2. *Savings claims.* The record in this proceeding demonstrates that insulation consumers are frequently confronted with energy savings claims made by industry members.(*152*) In many instances, these claims take the form of advertisements that state that the consumer's fuel bills will be reduced by a specified percentage or by a specified dollar amount after insulation is installed.(*153*) These claims are often exaggerated, with some advertisers claiming that fuel bills will be reduced by as much as 50 or 60 percent.(*154*) State consumer protection officials who have asked to see the proof behind these claims have found that they cannot be substantiated by the firms.(*155*)

Moreover, the amount of energy that can be saved by any individual homeowner through the purchase of insulation is affected by a plethora of factors.

These factors include the geographic region in which the house is located; the type and size of the house; the efficiency of existing heating and cooling systems; the amount of insulation already in the house; the presence or absence of other energy saving features, such as storm windows and doors; the number of occupants and their lifestyle; and the type and cost of the fuel used in the house.(*156*) Yet, with rare exceptions, savings claims do not disclose these factors to consumers.(*157*) Nor do they disclose that savings vary from consumer to consumer and that there are other factors to be considered.(*158*) Since any individual consumer's savings from insulation will depend on his or her particular circumstances, as well as on the purchased insulation's thermal efficiency, it is misleading to suggest that insulation can save *any* energy without disclosing that savings will depend on the consumer's particular circumstances.(*159*)

3. *Other claims.* Two remaining types of claims warrant attention. First, several ads on the record deceptively suggest that consumers will qualify for a tax credit through the purchase of insulation.(*160*) In addition, one state agency pointed out that numerous retailers had been misrepresenting the availability of federal tax credits.(*161*) These claims were being made long before the National Energy Act was passed by Congress, and certainly before it was clear that federal tax credits for insulation purchases would be available.(*162*) Now that the tax credit is enacted and available, the Commission is concerned, based on this record of past deception, that some products which are not eligible for tax credits may be advertised deceptively.

Second, several ads for insulation claim that the products have been "certified" by federal agencies.(*163*) these claims are misleading. Federal agencies merely set procurement standards which apply to any insulation purchases made or funded by the agency. However, no federal agency certifies the performance or acceptability of any insulation product.(*164*)

C. *Prevalence of Unfair and Deceptive Acts and Practices.* In making its assessment of the frequency with which unfair or deceptive practices are occurring in the home insulation industry, the Commission must consider a number of factors. These include the number of consumer complaints;(*165*) the opinions of experts in the field; documentary evidence such as insulation labels, advertisements, and other promotional materials; (*166*) the testimony of industry members regarding the need for a trade regulation rule;(*167*) studies and investigations performed by state and federal governmental agencies; newspaper investigations and exposes; and the Commission's own prior experience in regulating the practices of insulation industry members through individual cease and desist orders. In sum, the issue of prevalence requires the Commission to examine all of the materials in the record. Moreover, the issue of prevalence involves an examination of both the number of industry members engaging in practices violative of section 5 and the number of consumers affected by the practices.

Millions of consumers are adding insulation to their homes each year,(*168*) and there are thousands of home insulation manufacturers, distributors, and retailers. As the preceding discussion indicates, many of the industry practices that violate section 5 of the Federal Trade Commission Act are almost uniformly used. For example, most industry members base their R-

value claims on tests performed with one-inch thick insulation samples. Similarly, almost no firms reduce their tested R-values to account for aging, compression, settling, or shrinkage of the product; nor do the firms disclose the fact that these physical changes will occur and may significantly reduce the represented R-value. Despite the abundance of savings claims on the record, almost none indicate that the consumer's savings will depend on many factors, or indicate what those factors are.

Many of the other practices found to be unfair or deceptive also are used frequently. For example, the failure of insulation sellers to disclose product R-values occurs quite often. Of the product labels examined in a survey of Washington area stores, 40 percent did not disclose the R-value of the product. Similarly, 20 percent of the insulation ads on the record state a price or thickness without disclosing the corresponding R-value.

Finally, some of the practices affected by the Rule apparently occur only occasionally. Although the record contains evidence of false or misleading certification and tax claims, the evidence does not suggest that these claims have been made on a widespread scale. However, with enactment of the federal tax credit and the residential conservation program under NECPA, the Commission anticipates that such claims will become substantially more prevalent in the future. Moreover, the Rule provisions that govern these claims merely state the obvious principle that false claims are prohibited by section 5. Since such section 5 violations are so patent, the Commission believes that the claims are appropriately addressed in the rule even if only a few firms are making them.

As this discussion indicates, most of the section 5 violations that this Rule addresses are occurring on a widespread scale. On the basis of the record taken as a whole, and in light of the extremely high demand for home insulation, the Commission is convinced that large numbers of consumers are affected by these practices, and that this number represents a significant percentage of all industry-consumer interactions. The record evidence is therefore sufficient to convince the Commission that action to protect the home insulation consumer from these unfair and deceptive practices is justified.

III. The Provisions of the Rule

A. *Scope of the Rule.* The scope of the Rule adopted by the Commission is determined mainly by the definition of "home insulation" in § 460.2, and by the provisions of § 460.4. The Rule applies generally to thermal insulation materials that are "for use in old or new homes, condominiums, cooperatives, apartments, modular homes, or mobile homes."(*169*) With two explicit exceptions,(*170*) the Rule thus covers all thermal insulation products sold for residential applications.

A number of participants contended that the Rule should also apply to other products with insulating characteristics, such as storm windows and doors.(*171*) Despite their insulating characteristics, these products are distinct in several respects from thermal insulation materials, and their treatment would have complicated and prolonged the proceeding.(*172*) In the interest of expeditiously considering regulation of the home insulation industry, the Commission determined at the outset of this proceeding that such products should be excluded from the proposed rule.(*173*) As a result, members of these related industries did not participate in the rulemaking, and the record evidence concerning practices in these industries is sparse. Under these circumstances, the Commission has determined not to include these products in the Rule.

While § 460.2 specifies which products are covered under the Rule, § 460.4 indicates when the Rule applies.(*174*) The Rule must be followed whenever a covered person imports, manufactures, distributes, sells, installs, promotes, or labels home insulation. The Rule also applies to the supplying of written information for,(*175*) and the preparation and use of, home insulation labels, fact sheets, ads, and other promotional materials for consumer use. The relevant limitation here is that the written materials must be "for consumer use." The Commission recognizes that insulation manufacturers often prepare detailed, technical data for building industry professionals, such as architects.(*176*) These professionals should already be sufficiently informed concerning insulation performance characteristics, and manufacturers may wish to provide them with information that differs from that required under the Rule. The Commission has therefore concluded that its Rule should not apply to such materials.

B. *Testing Requirements.* 1. *Duty to test R-value.* In § 460.5 of the Rule, the Commission has required that all insulation R-values disseminated to consumers be based on standard scientific tests of thermal efficiency. The specific testing schemes for mass insulation materials, and for insulation products using reflective aluminum foil, are discussed in Section III.B.3, *infra.*

As noted in Section II.B.1.c of this statement, the record shows that presently used methods for determining R-value fail to consider several factors which have a material effect on thermal performance. As a result, such methods are unreliable forms of R-value substantiation and generate results which can mislead consumers. These methods include: (1) in lieu of testing, using pre-published R-values applicable to a general insulation category but not necessarily accurate for a particular manufacturer's insulation product;(*177*) (2) extrapolating R-values from thin-sample tests, an inherently deceptive procedure because of the non-linearity of per unit R-values;(*178*) (3) testing samples at low temperatures to gain a comparative advantage over competing R-values determined at higher temperatures;(*179*) and (4) testing samples without accounting for the adverse effects of settling, aging, and shrinkage on R-value.(*180*)

In light of this evidence, R-value disclosures based on presently used test methods would sanction the continued deception of consumers. Moreover, unless all home insulation R-values are determined in a standardized manner, consumers will effectively be subjected to the unfairness associated with the failure to disclose R-values. In other words, the disclosure of R-values which are based on differing test methods and which consumers cannot effectively use in making their purchasing decisions is, for all practical purposes, a failure to disclose R-value.

As the record indicates, thermal resistance is a product characteristic reflecting physical properties and environmental factors which can be analyzed only by scientific means. It also indicates that the test methods prescribed by the Rule are the only reliable methods for accurately determining R-value.(*181*) Moreover, the Commission believes that reasonable consumers, generally recognizing the technical nature of insulation materials, would expect R-value claims to be documented by results of some form of scientific testing.(*182*) Given this set of circumstances, the Commission has required that all R-values represented by manufacturers be substantiated by particular scientific test methods as set forth in the Rule.

Section 460.5 prescribes the use of ASTM C177, C518 or C236 for determining the R-value of an insulation material.(*183*) These tests are "consensus" ASTM procedures(*184*) and are published as standard test methods in ASTM's *Annual Book of Standards.*

The prescribed test methods provide R-value measurements under "static" or "steady-state" laboratory conditions.(*185*) In other words, neither these tests nor any other available tests can take into account transient environmental factors, such as moisture and air circulation, which can have a significant effect on insulation performance.(*186*) Thus, the R-value determined by the prescribed laboratory tests may not always accurately reflect "effective," or "*in situ*," insulation performance.(*187*) Notwithstanding this limitation, the record shows that they are the most reliable and accurate test methods available.(*188*). Accordingly, their implementation will permit fair comparisons of product R-values on a standardized basis to provide consumers with a reliable, uniform, and comparative base for their purchasing decisions.

2. *R-value testing for mass insulations.* As previously noted, § 460.5(a) of the Rule designates the use of one of three tests—ASTM C177, C518, or C236—for determining the R-values of all types of mass insulation. The record shows that all three tests are highly accurate and reproducible steady-state methods.(*189*) Since manufacturers of mass insulation materials are unlikely to use on a regular basis ASTM C236, which is a "systems" test,(*190*) this section discusses the provisions relating only to ASTM C177 and C518.(*191*)

a. *Representative thickness testing.* The record shows that mathematical extrapolation of R-value from thin-sample tests is inherently inaccurate and misleading, because it fails to recognize the non-linearity of R-value with increases in thickness.(*192*) In recognition of this problem, ASTM revised both C177 and C518 in 1976(*193*) to discourage such extrapolation and to encourage instead the use of test specimens of sufficient thickness to ensure that thermal resistance measurements will reflect the effect of thickness on R-value.(*194*)

In section 460.6 of the Rule, the Commission has incorporated the 1976 revisions to ASTM C177 and C518 by requiring "representative thickness testing"(*195*) for all mass insulations. Rulemaking participants did not dispute the scientific principle behind this requirement; indeed, virtually every party agreed that changes in thickness affect R-value, and that the use of revised C177 and C518 would improve the accuracy of R-value claims made to consumers.(*196*) Nevertheless, some segments of the industry, principally the mineral wool manufacturers, repeatedly contended that the Commission should not mandate representative thickness testing at this time.(*197*) Instead, these participants recommended that they be allowed to continue promoting R-value results taken from thin-sample tests. They advanced two arguments to support this position.

The first contention is that mandatory representative thickness testing should be postponed until sufficiently thick standard calibration materials are available from the National Bureau of Standards (NBS).(*198*) Without such materials, it is alleged, there will be significant measurement uncertainties associated with representative thickness testing. As a result, different laboratories measuring the same insulation sample could produce different R-values, raising a question of the reliability and comparability of all R-value claims. For this reason, the industry members argue that standard calibration materials are essential to a representative thickness testing program.

Although the Commission recognizes the lack of standard calibration specimens as a shortcoming and encourages the development of such materials for commercial use as rapidly as possible, it also believes that the record evidence contradicts industry's contention in several respects. First, there is evidence that the availability of thin-samples for calibration of thin-samples tests has not completely eliminated measurement variations among different laboratories.(*199*) Second, even by the admission of the mineral wool manufacturers, round robin test results on thick samples using representative thickness testing techniques varied by only three or four percent.(*200*) These results are within acceptable limits,(*201*) and are more precise than those obtained in a 1976 international round robin using thin samples.(*202*) Indeed, they are a very significant improvement over the 10 to 15 percent R-value reduction that consumers unwittingly experience due to the thickness effect.(*203*) These thick-sample round robin results suggest that internal calibration programs can be used effectively until standard calibration materials become available, and that the use of such programs will enable manufacturers to stay well within the tolerance limit imposed by the Rule.(*204*) Third, the record shows that the absence of standard calibration materials has not prevented other segments of the insulation industry from accepting the fact that representative thickness testing has become a realistic objective and should be required by the Rule.(*205*) In fact, despite their recommendation for continued thin-sample testing, the mineral wool manufacturers have been testing their loose-fill products at thicknesses up to six inches for years,(*206*) as have many cellulose manufacturers.(*207*) This has occurred despite the absence of any standard calibration materials at these thicknesses.(*208*)

Lastly, it is noteworthy that this new Commission requirement follows in the wake of similar action recently taken by other governmental and standards-setting bodies. For example, the HUD materials standard for urea-based foam products requires that urea-based foam manufacturers must perform R-value tests on samples at least three inches in thickness.(*209*) Similarly, ASTM 739, the recommended specification for cellulose insulation, requires testing of cellulose at representative thickness, and the Canadian government has adopted a "derating" procedure to account for the effect of thickness on the R-value of cellulose insulation.(*210*) In addition, Canada has required since 1977 that the R-values for mineral wool batts be determined by representative thickness testing.(*211*) Finally, as discussed in Section III.B.3.a, *infra*, the reflective foil manufacturers who, like cellulose and urea-foam producers, are generally very small firms, must perform the more expensive and time-consuming ASTM C236 test so that claimed R-values will be as representative as possible of the performance of the foil system once installed.

This review indicates that many competitors of the mineral wool batt manufacturers must already perform representative thickness testing, and they must do so without any NBS calibration materials. Further, in this proceeding it has been almost exclusively the mineral wool industry members who continue to assert, somewhat contradictorily, that representative thickness testing cannot be implemented until these materials are provided by NBS. Absent immediate implementation of the representative thickness testing requirement in this Rule, the mineral wool manufacturers, who already hold an overwhelming share of the home insulation market, will preserve an unwarranted competitive advantage—at least for their batt products—over other industry members who are already or will be required to do representative thickness testing. For this reason, and in light of the evidence on the issue, the Commission concludes that standard calibration specimens, while desirable, are not essential to the implementation

of a representative thickness testing requirement.

The second argument advanced by mineral wool manufacturers is that there are not yet enough laboratories equipped with thick sample testing devices to be able to perform representative thickness testing for the entire home insulation industry.(*212*) Once again, the record refutes the industry contention. First, the evidence shows that the major fiberglass producers, which account for the great bulk of all home insulation sales, already have the necessary equipment and personnel to do representative thickness testing.(*213*) Second, several independent testing laboratories also have the requisite resources, and would be able to perform representative thickness testing for the non-fiberglass producing segments of the industry.(*214*) Third, there is evidence that additional laboratories are procuring thick-sample testing facilities in light of the 1976 ASTM revisions and in anticipation of a representative thickness testing requirement.(*215*) Fourth, it appears that some manufacturers will be able to continue testing relatively thin samples of their products,(*216*) and that there is more than enough equipment at present to meet these needs.(*217*) Finally, the Commission's deletion of the retesting requirement originally recommended by the staff(*218*) should greatly reduce the industry's testing burden and, thus, alleviate whatever backlogs might result from imposition of a representative thickness testing requirement on the non-fiberglass producers.

For the foregoing reasons, the Commission believes that the record supports its decision to require R-value testing at representative thicknesses. At the same time, the Commission recognizes that the present supply of laboratories is not abundant, and that the industry, especially those manufacturers who do not have in-house testing facilities, will need a reasonable grace period in which to prepare for the advent of mandatory representative thickness testing.(*219*) Accordingly, the Commission has determined that the new testing requirement and resultant changes in R-value disclosures should take effect 90 days following promulgation of the Rule. This length of time is based on detailed staff calculations reflecting the present numbers of testing laboratories and manufacturers in the home insulation market.(*220*)

b. *Test temperature.* As discussed in Section I.C.2 of this statement, R-values fluctute inversely with changes in temperature, so that lowering the test temperature will produce a corresponding rise in the tested R-value of a mass insulation. This aspect of thermal resistance poses a problem with respect to the manner in which R-values are reported to consumers. If two insulation products ordinarily have similar R-values under similar conditions, a significant downward adjustment of the temperature at which one of them is tested will make that product appear to have a higher R-value than the other product.

As this example shows, differences in test temperatures can distort not only the R-value of a particular product, but the comparability of R-values of different and competing products. Because such temperature distortions impede comparison-shopping and have the potential to confuse and mislead consumers, the Commission has required in section 460.5(a) of the Rule that R-value tests for mass insulation materials be conducted at a standard mean temperature.

Specifically, § 460.5(a) requires all R-value tests for these products to be done at a mean temperature of 75° Fahrenheit. The choice of this particular temperature is based on a significant volume of record evidence that 75°F is already a widely used test temperature and is incorporated in many voluntary industry standards and federal procurement specifications.(*221*)

Nevertheless, in specifying 75°F, the Commission acknowledges record evidence that this temperature has no particular advantage over any other temperature. As several participants noted, it is not representative of average temperatures in many geographical regions.(*222*) In light of this fact, the Commission has given careful consideration to recommendations that a lower standard mean temperature be prescribed,(*223*) or that disclosure of R-values tested at other temperatures be allowed to accompany the mandatory disclosure of R-values tested at 75°F.(*224*)

With respect to the first recommendation, the record shows that commenters critical of the 75°F standard nevertheless could not agree on a substitute mean temperature.(*225*) Thus, even if the standard test temperature should be one that is more representative of average climatic conditions than 75°F, the record does not indicate which alternative temperature should be prescribed. Moreover, in view of the fact that temperatures vary from region to region, the Commission doubts that any single temperature would adequately represent the range of average temperature conditions found across the country. Accordingly, the Commission rejects the recommendation that another temperature be substituted for 75°F as the standard mean temperature for R-value tests. The prescribed test temperature will be as effective as any other would be in providing a standard temperature condition for R-value comparison purposes.

With respect to the second recommendation, the Commission recognizes that R-values increase at lower temperatures and that other temperatures may be more applicable than 75°F to the average climates of many consumers. However, the Commission believes that a proliferation of R-value claims at various temperatures would confuse consumers, who are unlikely to be aware of the inverse relationship between R-value and temperature, and would complicate the process of comparison shopping which the Rule is designed to encourage. In addition, the Commission sees only marginal benefit in the recommendation to allow two R-values disclosures—one at 75°F and another at a lower standard temperature that would be designated in the Rule. Since any lower temperature, as previously noted, would not be representative of many areas, and since many consumers probably do not know the average temperature for their own geographical region, the Commission questions the utility of a second disclosure at a lower temperature. On balance, the Commission has concluded that the informational benefit would not be great enough to outweigh the risk of consumer confusion from an additional R-value disclosure at a second temperature. Accordingly, § 460.5(a) prescribes a uniform temperature standard of 75°F for all mass insulation R-value tests.(*226*)

c. *Aging of cellular plastics insulations.* As discussed in Section I.C.3 of this statement, a chemical aging process peculiar to certain cellular plastic materials causes their R-value to decrease over a period of time after manufacture. This aging process affects polyurethane, polyisocyanurate, and extruded polystyrene insulations. It lasts a variable length of time, sometimes as long as several years, and can have a significant adverse impact on the R-values of these products.(*227*) As a consequence, failure to account for this aging effect in the testing of these products results in R-value claims that are inflated and misleading to consumers.

Section 460.5(a) of the Rule addresses this problem by requiring that R-value tests for extruded polystyrene,(*228*) polyurethane, and polyisocyanurate

insulations be performed on aged samples. In particular, the Rule requires that these products be aged in accordance with the "accelerated aging" method specified in GSA Specification HH–I–530A,(*229*) or through a comparable procedure that reflects the adverse effect of aging on the product's R-value.

The GSA accelerated aging test received support from a number of commenters, who noted that it is already used by some industry members, and that it will accurately reflect years of aging.(*230*) However, the representative for the Society of the Plastics Industry noted that some products may suffer physical distortions when subjected to the GSA procedure.(*231*) In addition, at least one manufacturer already has test data showing the R-value of material that has been aged for five years.(*232*) Therefore, the Commission has not specified the use of GSA's accelerated aging test in the Rule. Rather, any procedure that results in R-values fully reflective of aging will be acceptable.

d. *Settled density testing for loose-fill insulations.* As discussed in Section I.C. 4 of this statement, loose-fill cellulosic and mineral wool materials always settle in attics, and will also settle in walls if not installed to the proper density. This settling reduces the R-value of the insulated area.(*233*) Section 460.5(a) of the Rule remedies this deception by prescribing a scheme for testing loose-fill R-values at their "settled density." With respect to cellulose insulation, this provision requires that R-value tests be performed at the settled density determined under GSA Specification HH–I–515D.(*234*) This settled density test for cellulose represents a significant technological advance in the art of insulation testing. More to the point, since cellulose R-value as tested will be discounted for settling, incorporation of the new GSA Specification obviates the need for the cellulose settling disclosure that had been recommended by the staff,(*235*) and will make the cellulose coverage chart information as accurate as current technology permits. In addition, it responds to a number of recommendations in the record for settled density testing.(*236*)

No final settled density testing procedure has yet been accepted for loose-fill mineral wool. However, the mineral wool manufacturers contend that the coverage charts for their loose-fills take settling into account, and that if the coverage information is followed, the consumer will attain the represented R-value.(*237*) Under these circumstances, the Commission is presently imposing a general requirement that loose-fill mineral wool R-values be based on tests that take the adverse effects of settling into account.(*238*) In addition, section 460.5(a) of the Rule states that as soon as a settled density test for loose-fill mineral wool becomes part of a final CSA Specification, R-value tests for that product must be done at the settled density determined under the GSA Specification.(*239*)

3. *R-value testing for foil insulations.* Sections 460.5(b), (c), and (d) of the Rule specify R-value testing requirements for insulation products that use reflective aluminum foil material. Specifically, these provisions prescribe separate testing requirements for reflective aluminum foil systems and for mass insulation materials that have foil facings.

a. *R-value test for reflective aluminum foil systems.* The record demonstrates that ASTM C236 is the appropriate R-value test method to use for reflective aluminum foil materials. Unlike C177 and C518, C236 is principally designed for thermal insulation systems, not for an individual material.*(240)* The record further shows that it is the only current standard test method that can be used to determine the thermal resistance of such integrated products as reflective foil systems.*(241)*

Section 460.5(b) of the Rule accordingly states that the R-value of a foil system with more than one sheet of foil (multiple airspaces) must be determined by the C236 method.*(242)* During the hearings, the Aluminum Association contended at first that the C236 testing requirement would be an unnecessary and undue burden on reflective insulation manufacturers. Instead, the Association recommended that these industry members be allowed to base their R-value claims on the pre-published ASHRAE R-value tables for airspaces.*(243)* The evidence in the record refutes the Association's position in two respects. First the ASHRAE tables do not provide R-values for multiple airspaces systems, but only for single-sheet systems.*(244)* Second, the record shows that extrapolation of a total R-value for a multiple system from the ASHRAE R-value for a single airspace is an unreliable procedure.*(245)* In light of these weaknesses in its position, the Association finally agreed that the rule should require C236 testing for multiple airspace systems.*(246)*

Although the Aluminum Association's argument lacked force with respect to multiple airspace systems, it did lead the staff to recommend that the Commission require a lesser burden of substantiation of R-value claims for single airspace claims by first determining the emissivity *(247)* of the foil and then finding the ASHRAE R-value which corresponded to the determined emissivity level.*(248)*

With one modification, section 460.5(c) of the Rule has incorporated this staff recommendation.*(249)* Based on hearing testimony provided by the Aluminum Association, the staff recommended that the foil's emissivity be determined in accordance with ASTM C445.*(250)* During the post-record comment period, however, it was discovered that C445 was being revoked by ASTM,*(251)* and that one appropriate emissivity test to require instead was ASTM E408.*(252)* Accordingly, section 460.5(c) of the Rule requires the emissivity of foil in single airspace systems to be tested by ASTM E408 or by a comparable test method.*(253)*

b. *Insulations with foil facings.* Mass insulation materials with foil facings *(254)* are distinctive products because they can actually have two R-values, depending on the manner in which they are installed. If the material with facing is simply installed in part of the house, it has only its "material" R-value. However, if it is installed in conjunction with an airspace, the interaction of the airspace and facing provides an additional insulating effect.*(255)* As a result, § 460.5(d) prescribes a particular testing scheme for foil-faced products used alone*(256)* and in conjunction with an airspace. In the latter case, the rule provides that a manufacturer of such a system may determine its total R-value in one of two ways:

(1) The manufacturer may test the system, with its airspace, under C236, following the applicable rules in § 460.5(a) for mass insulation testing; or

(2) The manufacturer may add to the tested R-value of the material, the R-value of the airspace as derived from the ASHRAE tables under the rules in § 460.5(c).*(257)*

Although two commenters suggested that the C236 test be deemed the only permissible method for determining the system R-value of a foil-faced material,*(258)* the Commission believes that this would be an overly burdensome requirement. The Rule already permits the use of the ASHRAE R-values for single airspace reflective systems, and there does not seem to be any basis for distinguishing between these products and single sheets of foil attached to mass insulations. Since C236 is a relatively expensive and time-consuming test, the Commission does not believe that it should be exclusively required absent strong indications that the ASHRAE R-values for single sheets

of foil are inaccurate in the context of foil-faced mass insulation. Thus, the Commission concludes that the discretionary scheme in § 460.5(d) represents the more reasonable and equitable approach to determining the system R-value of foil-faced products used in conjunction with an airspace.

4. *Changes in the test methods.* As noted earlier, the Rule requires that the current version of the referenced test methods be used. The Commission is concerned, however, that its Rule not have the undesirable effect of chilling advances in thermal testing technology. To avoid such stagnation, and, in fact, to promote improvements in the science of thermal testing, numerous participants suggested that the Rule provide for "automatic incorporation" of future test revisions.*(259)* The Commission is in basic agreement with this approach, and § 460.7 states that changes in the test methods specified in the Rule will automatically become a part of the Rule 90 days after they are published.*(260)*

The issue raised by § 460.7 is whether section 18(d)(2)(B) of the FTC Act would require a reopening of the rulemaking proceeding in order to make test method revisions a part of the Rule. The Commission need not resolve this issue at this time. In many instances, changes in the test methods may be of a technical or "housekeeping" nature and, thus, may not rise to the level of a "substantive" amendment to the Rule.*(261)* In other cases, however, a test change may be so significant that formal Commission consideration of the matter seems necessary. In order to allow parties the opportunity to call to the Commission's attention what they regard as significant test changes that should be addressed explicitly by the Commission, § 460.7 of the Rule permits the Commission's staff or any person affected by the change to petition during the 90-day period for formal Commission consideration of the matter.

5. *R-value tolerances.* It is arguable that manufacturers of home insulation products should be required to state with absolute precision the R-values of their products. Practically speaking, however, such precision is not yet possible. As noted in Section I.B.1 of this statement, most home insulations are heterogeneous in nature; that is, they have variable rather than constant properties. In addition, the quality of insulation products varies depending on the presence of inconsistencies in the manufacturing process. These variations in composition and production can have a significant effect on the thermal resistance of home insulation.*(262)* As a result, adequate quality control measures are essential to ensure that the thermal performance of insulation products will be as consistent as is practically possible.

On the other hand, the inherent variability of there materials means that it is necessary to provide manufacturers with a defense for minor R-value variations from product to product. In other words, a quality control provision in the rule serves two purposes. It ensures that represented R-values are accurate within acceptable limits, and it provides manufacturers with enough leeway so that compliance with the Rule is not rendered impossible.

Although the proposed rule did not include any quality control requirements, the notice of rulemaking invited public comments on quality control issues.(*263*) The hearings and comments produced several recommendations for Commission action on this point, ranging from leaving quality control completely unregulated to requiring manufacturers to institute comprehensive quality control programs.(*264*) Given the need for quality control, the former recommendation is clearly unacceptable. Yet, given the differences in approach and the enormous complexities in quality control systems that were described in the proceeding.(*265*) the latter recommendation seems unrealistic and too prescriptive in this context. Between these extremes, however, several more moderate recommendations were made. These included such ideas as third-party testing, sample selection, R-value tolerances, and periodic retesting.(*266*)

The rule recommended by the staff required two of these elements of quality control: periodic retesting and an R-value tolerance limit. Specifically, the staff suggested that R-value tests be repeated at least every 60 days and, in addition, that the actual R-value of an insulation material could not be more than 5 percent below the stated R-value.(*267*)

Although the commenters differed on the soundness of the 60-day retesting requirement, they generally agreed that the record brought to light no specific testing frequency that is superior to all others.(*268*) In addition, several commenters pointed out that the basic quality control standard of the Rule was in the R-value tolerance provision and not in the retesting requirement.(*269*) The reasoning behind this view is that in order to stay within the tolerance limit, manufacturers will have to institute whatever in-plant quality controls are necessary to achieve this objective. Since the record fails to illuminate how much testing is necessary to adhere to a tolerance limit for each product, and since the manufacturers themselves are the best judges of this need, the Commission has deleted the specific retesting provision. In its place, the final Rule establishes the tolerance provision as the governing quality control mechanism.

Although the Commission has decided to make a tolerance limit the chief incentive for quality control, it has raised the 5 percent tolerance ceiling recommended by the staff to 10 percent.(*270*) This change to a 10 percent tolerance limit is more in line with prevailing quality control standards in industry and GSA specifications.(*271*) and will ease the quality control burden on manufacturers. More importantly, it ensures that conscientious manufacturers will not be faced with the prospect of liability for relatively minor variations in product R-values.

The Commission wishes to note that the tolerance provision does not give manufacturers a license to raise their R-values above the levels determined through R-value testing. Rather, the testing sections impose two separate bases for potential liability. First, manufacturers will be liable if their labeled R-values do not accurately reflect the results of tests performed in accordance with the Rule. Second, if the Commission tests the manufacturer's product, the tested R-value must be within 10 percent of the R-value shown on the label. If the product is not within this 10 percent tolerance, the manufacturer will be liable even if the labeled R-value accurately reflects the test results available to the manufacturer.(*272*) In that event, failure to pass the tolerance test indicates that the manufacturer's quality control procedures are insufficient to provide consumers with any assurance that they are achieving the represented R-value.

6. *Recordkeeping.* In response to recommendations on the record and to aid enforcement, the Rule requires records of R-value tests to be kept for three years.(*273*) Under § 460.9, manufacturers and laboratories must keep the information specified in the "Report" section of the ASTM test method that is used for a test. Section 460.9 also specifies retention of the following items: (1) the name and address of the testing lab; (2) the test date; (3) the date a lab sent the test report to the manufacturer and the date the manufacturer received the test report; (4) the age (in days) of tested extruded polystyrene, polyurethane, and polyisocyanurate; and (5) the emissivity level of tested aluminum foil. The Commission believes that retention of

this information is essential to effective enforcement of the Rule.(*274*)

C. *Labeling Requirements.* As the discussion in Section II, *supra,* indicates, the most important component of this Rule is the pre-purchase disclosure to consumers of R-value information for home insulation materials. In light of the prevailing marketing practices in the industry, the Commission has chosen several mechanisms to effectuate the disclosure of this information.

1. *Insulation package labels.* a. *Coverage charts.* Under the rule as initially proposed, all insulation packages were required to be labeled with an R-value and the corresponding thickness and coverage area that would be attained.(*275*) In general, this provision found considerable support in the record.(*276*) However, because of the widespread use of coverage charts in the insulation industry, and because of the ease with which essential pre-purchase information can be conveyed on such charts,(*277*) the Commission agrees with industry members that each package label should contain a coverage chart.

Due to differences among the various forms of home insulation, the staff recommended slightly differing disclosures for the products. Thus, for batt, blanket, and boardstock insulation, all of which are pre-shaped at the factory in specified dimensions, the staff recommended disclosure of the product's R-value, the dimensions of the package, and the number of packages needed to cover 1,000 square feet.(*278*) For loose-fill, the staff's recommended disclosures included the R-value, coverage area, and weight per square foot of the insulation at thicknesses of one, three and one-half, and six inches;(*279*) the number of packages needed to cover 1,000 square feet; and the total weight of the package.(*280*) For aluminum foil insulation, the staff recommended that package labels disclose the number of foil sheets; the number and thickness of the air spaces; and the R-value provided by the foil system when the direction of heat flow is up, down, and horizontal.(*281*)

Those who commented on the Staff Report suggested numerous improvements to the staff's recommended disclosures. Batt, blanket, and boardstock manufacturers, for example, suggested clarifications of the dimensional disclosures required for their products.(*282*) Loose-fill manufacturers urged that the Commission follow the labeling provisions found in the federal purchasing specifications, since they provide essentially the same disclosures in a different format, and since many industry members already comply with the federal specifications.(*283*) Several commenters suggested that the total package weight" disclosure for loose-fills be replaced by a "minimum net weight disclosure, since minor weight variations above the stated minimum will not reduce the R-value below that stated on the label.(*284*) Finally, one manufacturer recommended a separate disclosure provision for mass insulations with reflective facings, to account for the additional R-value that is achieved when such products are installed in conjunction with an airspace.(*285*) This last suggestion received further support during the oral presentations to the Commission.(*286*)

The Rule adopted by the Commission reflects the recommendations of the commenters. With respect to all products for which an existing federal specification includes a labeling provision, the Commission is requiring the same disclosures mandated by the federal specification.(*287*) This approach will provide continuity in the labeling practices of many manufacturers and will minimize the cost of compliance with the Rule. There are several products, however, for which no existing federal specification includes a labeling provision. In these cases, the Commission has required disclosures which the record supports, taking into account the similarities among the products covered by the Rule. Thus, for both boardstock and air duct wrap, which are essentially the same as batt and blanket insulation,(*288*) the Rule requires disclosure of the dimensions and coverage of the insulation in the package, and of its R-value.(*289*) For perlite and vermiculite loose-fill, which have R-values roughly equivalent to those of loose fill mineral wool,(*290*) the Rule requires that the coverage chart in the federal specification for loose-fill mineral wool be followed.(*291*) For aluminum foil insulation, the Rule requires disclosure of the product characteristics that govern the R-value to be achieved: the number of foil sheets; the number and thickness of the airspaces; and the R-value provided by the system when the direction of heat flow is up, down, and horizontal.(*292*)

Mass insulation materials with foil facings present a unique problem: they can have both a "material" R-value and a "system" R-value. The material R-value is simply the R-value of the mass insulution itself, while the system R-value is the R-value that can be achieved if the product is installed in conjunction with an air space.(*293*) Under the Rule adopted by the Commission, the material R-value must be disclosed in all cases. In addition, manufacturers may disclose the system R-value, as long as they clearly and conspicuously state the conditions under which the system R-value can be attained.(*294*)

The labeling disclosures required by the Commission's Rule are essential to the consumer's purchasing decision. Without the dimensional disclosures for batt, blanket, boardstock, and duct wrap insulation,(*295*) for example, the consumer cannot determine whether the material will fit into the area to be insulated or how many packages of the insulation to buy.(*296*) The same is true of the thickness and coverage area disclosures for loose-fill products. A single bag of loose-fill insulation can provide almost any desired R-value, depending on how many square feet are covered and to what thickness. Thus, these disclosures are essential to an evaluation of loose-fill R-value. Finally, the disclosures required for aluminum foil concerning the product's R-value and direction of heat flow are essential to the consumer's purchasing decision. Without this information, the consumer cannot determine whether the installation of the material in a wall or ceiling, for example, will produce the desired R-value.(*297*)

In addition to being essential purchase information, certain of the disclosures required on coverage charts are also needed to effectuate the Commission's R-value disclosure scheme. The minimum weight per square foot and minimum net weight disclosures for loose-fills fall into this category. Without this information, the Commission will not be able to ascertain the accuracy of the manufacturer's R-value and settled density claims.(*298*) Similarly, unless the number of foil sheets and the number and thickness of the airspaces are disclosed for aluminum foil inslulation, the Commission will not be able to verify R-value representations for those products.

The Commission therefore concludes that the various labeling disclosures required for each insulation material covered by the Rule are both necessary and reasonable.

b. *Other label disclosures.* Section 460.12 of the Rule requires two additional disclosures that must appear on all package labels. The first of these is a brief explanation of the term "R-value."(*299*) The need for this disclosure is clear, since the record demonstrates that most consumers are totally unfamiliar with the R-value concept.(*300*) In light of this fact, the Commission believes that the R-value explanation is an essential

accompaniment to the R-value disclosures on package labels.(*301*)

The second disclosure required for all package labels concerns the need for proper installation. The record demonstrates that proper installation is crucial to the performance of any insulation material.(*302*) It is not at all clear, however, that insulation consumers are aware of this fact. Many labels on the record do not contain installation instructions, nor do they warn consumers of the critical role that installation plays in insulation performance.(*303*) In addition, two witnesses who have had extensive contact with insulation purchasers in recent years indicated that consumers do not realize the significance of proper installation.(*304*) This position is further supported by evidence that there are many instances in which improper installation occurs, causing a reduction in the R-value achieved by the consumer.(*305*)

To remedy this situation, many participants recommended a label disclosure concerning the importance of proper installation.(*306*) Indeed, a number of parties suggested that the Rule mandate the inclusion of installation instructions in all insulation package.(*307*) The Commission does not believe that it is necessary to go so far. Instead, the Rule requires only that the critical importance of proper installation be disclosed to consumers and, if installation instructions do not come with the package, that this fact also be disclosed on the label.(*308*)

2. *Insulation fact sheets.* In addition to the package labeling requirements in the Rule, the Commission is also requiring that insulation manufacturers provide fact sheets to retailers and installers of their products, for ultimate distribution to consumers. With minor exceptions,(*309*) these fact sheets must contain the same information that would appear on product labels.

There are a number of reasons why fact sheets are needed to supplement the Rule's labeling requirement. First, the evidence shows that insulation sold through retail stores to do-it-yourself consumers is often unavailable for inspection prior to purchase.(*310*) Thus, even if the package is labeled, the consumer may not be able to review the relevant R-value information prior to purchase.(*311*) Second, some products, even though they are sold through retailers, are not generally sold in packaged form.(*312*) As a result, no labeled information would be available with respect to these products.(*313*) Finally, the Rule contains no labeling requirement for insulation that is installed professionally, rather than by the homeowner.(*314*) In this situation, the fact sheet would serve as the product's label. Because of the ways in which home insulation is marketed, the Commission believes that its fact sheet requirement is necessary to effectuate the disclosure of essential pre-purchase information to consumers.

a. *Disclosures required on fact sheets.* In general, the Commission's Rule requires that fact sheets disclose the information required for the product's label under § 460.12. Thus, the sheets must contain an R-value explanation; a disclosure of the importance of proper installation, and the coverage chart required for the product under § 460.12 (b).(*315*) For foamed-in-place insulations, which are not subject to labeling under § 460.12(b),(*316*) the Rule requires a chart showing the product's R-value at a three and one-half inch thickness, and at any additional thicknesses listed by the manufacturer.(*317*) For these foamed-in-place products, the R-value and thickness disclosures provide all of the coverage chart information needed for a pre-purchase evaluation of the material.(*318*)

The Rule also requires specific disclosures on the fact sheets for urea-formaldehyde foam and duct wrap insulation. In the case of urea-formaldehyde foam insulation, the fact sheet must disclose that the product shrinks after installation, and that the shrinkage may significantly reduce the R-value attained by the consumer.(*319*) The record contains overwhelming evidence that UF foam shrinks and that shrinkage reduces R-values.(*320*) There is disagreement, however, concerning the magnitude of the R-value reduction caused by shrinkage.(*321*) Considerable evidence indicates that the R-value reduction may be as high as 28, 40, or even 50 percent,(*322*) but industry members contend that it is much lower.(*323*) Even industry members concede that the R-value reduction attributable to shrinkage may be on the order of 10 or 15 percent,(*324*) though, and the Commission believes that such a reduction is significant.

The staff originally recommended a disclosure that would have had the effect of derating all UF foam R-values by 28 percent.(*325*) Yet, some manufacturers may be able to demonstrate that the shrinkage-related R-value loss for a particular product is less than 28 percent.(*326*) Moreover, an across-the-board 28 percent derating might discourage industry efforts to control the shrinkage phenomenon. At the very least, such a provision would necessitate amendments to, or exemptions from, the Rule as the state of the art in shrinkage testing advances.

In light of these factors, the Commission has decided not to adopt the disclosure recommended by the staff. Instead, the rule requires that fact sheets for UF foam insulation disclose the fact that the product shrinks, and that the shrinkage "may significantly" reduce the R-value attained by the consumer.(*327*) In addition, the Rule provides that manufacturers may derate their products' R-values "based on reliable scientific proof of the extent of shrinkage . . . and of its effect on R-value."(*328*) If the product's R-value is derated in accordance with this provision, the manufacturer need not include the shrinkage disclosure on the fact sheet.(*329*) The Commission believes that this approach will protect consumers from deception, and at the same time encourage product and testing innovations in the UF foam industry.

The other product for which a specific disclosure is required on fact sheets is air duct insulation. This flexible material must be wrapped around the air duct during installation, causing significant compression at the edges of the duct.(*330*) This compression will reduce the R-value of the material below the tested R-value.(*331*) The precise extent of the R-value reduction will depend on the extent to which the material is compressed.(*332*) Since there is no test available to account for this compression factor,(*333*) the fact sheets for air duct wrap must disclose that the product's R-value "varies depending on how much it is compressed during installation."(*334*)

The staff originally recommended a number of other fact sheet disclosures concerning such potential problems as excessive compression of mineral wool batts,(*335*) improper handling of aluminum foil,(*336*) and moisture buildup in insulation materials.(*337*) Although there was some evidence supporting these disclosures,(*338*) they were criticized by commenters as being overly simplified and in conflict with proper installation practices.(*339*) More importantly, the disclosures provided information concerning proper installation techniques, rather than information bearing on the consumer's evaluation of the particular product's R-value.(*340*) Since the purpose of the fact sheets—and of the labeling provisions in general—is to provide information essential to the consumer's assessment of insulation R-values, the Commission has decided not to require these disclosures.

b. *Preparation and distribution of fact sheets.* Under the rule initially

recommended by the staff, manufacturers were required to prepare separate fact sheets for each insulation product they marketed.(*341*) For example, a producer of batt insulation in several different sizes was required to have a fact sheet for each product.(*342*) To minimize the costs of compliance with the Rule, the Commission has decided on a different approach. Section 460.13(c)(2) of the Rule permits manufacturers to consolidate the coverage chart information for similar products on the same fact sheet.(*343*) For example, the coverage charts for several different sizes of batt insulation products could be put on a single fact sheet. Similarly, coverage charts for two different bag sizes of loose-fill products may be consolidated on one fact sheet.(*344*) On the other hand, separate fact sheets are required for batt and loose-fill materials, since the difference between the two products concerns their characteristics, rather than their dimensions. The Commission believes that this provision of the Rule will significantly reduce the number of different fact sheets that must be prepared by each manufacturer.

The staff's recommended rule also required that manufacturers provide their retailers and installers with enough fact sheets for distribution to each purchaser of the products.(*345*) Several commenters contended that this provision would require the preparation and distribution of a large number of fact sheets.(*346*) As an alternative, they suggested that the Commission adopt a "binder system" for fact sheets, modeled on the warranty disclosure rules promulgated under the Magnuson-Moss Warranty—Federal Trade Commission Improvements Act.(*347*) Under this approach, retailers and installers would receive only one fact sheet for each product. These fact sheets would all be kept in a book or binder, which would be available for inspection by consumers.(*348*)

The Commission is not convinced that the suggested binder system should be mandated by the Rule. Instead, the Rule permits retailers and installers the flexibility to choose among various disclosure mechanisms, as long as fact sheets are made available to consumers. For example, retailers may use "Take One" displays, or may keep the fact sheets in a central binder.(*349*) Similarly, installers may actually give the fact sheets to their purchasers, or may show their customers a fact sheet binder prior to purchase.(*350*) In other words, the thrust of the requirement is simply that consumers must be given an opportunity to analyze the fact sheet information before they commit themselves to a purchase. To generate consumer awareness of the availability of fact sheets, and in support of the Commission's overall purpose of ensuring disclosure of prepurchase information, the disclosures required for certain advertisements encourage consumers to ask for fact sheets before buying insulation products. The advertising disclosures will be discussed shortly.(*351*)

3. *Disclosure by new home sellers.* Although the proposed rule did not require pre-purchase disclosures to new home buyers, the Commission specifically solicited comment on the question of whether new home sales should be covered by the disclosure provisions of the Rule.(*352*) The record indicates that most new home buyers will spend additional money on insulation if they are advised to do so by builders.(*353*) New home sellers, in turn, are capitalizing on this heightened consumer interest in energy conservation by advertising the energy efficient features of their homes.(*354*) Since a new home has no history of utility bills, the buyer is unable to evaluate anticipated energy consumption patterns. As a result, the amount of insulation to be installed in the home may significantly affect the consumer's decision to buy.(*355*) Thus, in this context no less than in the context of an insulation purchase alone, the Commission believes that the R-value of the insulation to be installed in the home is a factor material to the consumer's purchasing decision. The disclosure of this information will permit the new home buyer to evaluate the energy efficiency of his or her home, thereby furthering the national policy of energy conservation.(*356*)

Most of the rulemaking participants agreed that the Rule should require pre-purchase disclosure of R-value information to new home buyers.(*357*) However, the representative for the National Association of Home Manufacturers disagreed.(*358*) He agreed that R-values should be disclosed to new home buyers,(*359*) but he argued that new home builders are already subject to state energy conservation codes,(*360*) and that R-value information is often provided to new home buyers.(*361*) On the other hand, he conceded that energy conservation codes only set minimum performance standards, and do not require that R-value be disclosed to consumers.(*362*) He further conceded that R-values are not always disclosed to new home buyers, and that, in fact, he could not estimate how often such disclosures were made.(*363*) Since the Commission believes that R-value data must be disclosed, and since the evidence suggests that some consumers are not being provided with this information, a disclosure requirement for new home sales is necessary.

The staff originally recommended that R-value information be provided to new home purchasers via the fact sheets.(*364*) Under this approach, the seller was to give the buyer fact sheets for the various types of insulation installed in the home, and let the buyer read the fact sheets before signing a sales contract.(*365*) In the Commission's view, this is a cumbersome scheme, which may be difficult to implement and, possibly, to enforce. In its place, the Rule simply requires that new home sellers disclose in the sales contract the type, thickness, and R-value of the insulation that will be installed in each part of the house.(*366*) In the event that the buyer signs a sales contract before this information is known, or if the builder substitutes a different material under the terms of the contract,(*367*) the Rule states that the R-value disclosures must be made as soon as the information is known.(*368*)

Although the Rule requires that R-value information for new homes appear in the sales contract, the Commission makes no judgment concerning potential state law remedies for nondisclosure or inaccurate disclosure of R-values. Such a disclosure might constitute a warranty in some states, but not in others. The Commission's intent is merely to require that this information be disclosed, and the sales contract provides the most convenient and appropriate vehicle for the disclosure.

4. *Additional disclosure by installers.* Under the rule as initially proposed, all installers were required to provide their customers, after installation, with a written statement of the R-value and thickness of the insulation that was installed.(*369*) Although various additional disclosures were suggested, this provision was generally supported by the participants.(*370*) Of course, consumers who purchase from installers will have received a fact sheet prior to their purchase.(*371*) Unlike do-it-yourself consumers, however, these purchasers will never actually see a label stating the R-value, thickness, and coverage area achieved. Consumers who buy insulation through installers are, thus, in the same position as new home buyers. Absent a requirement to disclose exactly what was installed, they cannot fully assess the energy efficiency of their homes.(*372*) In addition, disclosure of this information

will provide them with an available reference, if they consider the purchase of additional insulation in the future. The Commission therefore believes that its R-value disclosure program cannot be fully effective unless these consumers, like do-it-yourselfers and new home buyers, are informed of the R-value that is actually installed in their homes.

The general requirement embodied in § 460.17 of the Rule is that R-value, thickness, and coverage area be disclosed to the consumer on a contract or receipt that is dated and signed by the installer. For loose-fill insulation, the receipt must also state the number of bags.(*373*) For aluminum foil, the number and thickness of the air spaces, the direction of heat flow, and the R-value must be disclosed. The Rule explicitly states that the installer may not multiply the R-value for one inch of the material by the number of inches installed. Instead, installers must use the R-value data provided by manufacturers, which will be based on representative thickness testing in accordance with the Rule.

D. *Insulation Advertisements.* 1. *Claims that trigger R-value disclosures.* When this rule was proposed, the Commission solicited comments concerning the circumstances under which insulation advertisements should be required to disclose R-value, thickness, and coverage area information.(*374*) The record evidence on this point indicates that there are several circumstances under which advertising disclosures are necessary.

First, the evidence shows that thickness and R-value must always go hand in hand. A thickness disclosure is necessary before consumers can evaluate products with the same R-value, since different materials provide the same R-value at disparate thicknesses.(*375*) Conversely, a thickness representation leads consumers to believe, mistakenly, that insulation materials can be evaluated without reference to their R-values. The Commission believes that a reference to either of these product attributes, thickness or R-value, without mentioning the other, is unfair and deceptive to consumers. Sections 460.18 (a) and (c) of the Rule therefore require that an ad which states the product's thickness must disclose the corresponding R-value, and that an ad which states the product's R-value must disclose the corresponding thickness.

The Commission also sought comment on the question whether a statement of an insulation material's price in an ad should trigger additional disclosures.(*377*) Based on the record evidence, the Commission concludes that a price claim, standing alone, is both unfair and deceptive. For example, a consumer cannot evaluate the significance of a claim that his or her attic can be insulated for "as little as $100," without knowing what R-value will be attained at that price. Moreover, even if the ad includes the price for a stated R-value and thickness, the consumer may still be misled. A very high R-value can be achieved at a very low price if, for that price, only a small area will be insulated.(*378*) Thus, the Commission's rule requires that price claims be accompanied by the R-value, thickness, and coverage area at that price.(*379*)

The proposed rule contained a provision requiring comparative claims of thermal performance to be based on equal coverage area and to include R-value, thickness, and coverage area disclosure.(*380*) As the discussion of price claims suggests, the requirement that comparisons be based on equal coverage areas is necessary to prevent unfair and deceptive comparisons. In addition, the record contains a number of examples of comparative claims which fail to disclose the R-values of the products being compared.(*381*) This is so despite general agreement that R-value is the measure of thermal performance that permits consumers to evaluate competing insulation products.(*382*) Section 460.18(d) of the Rule thus requires that ads which compare the thermal performance of one type of insulation with that of another disclose the R-value and thickness of each material.(*383*)

2. *The R-value explanation.* The proposed rule stated that, whenever an ad mentioned a product's R-value, it was required to disclose the explanation: "The higher the R-value for a given area, the more you save on fuel."(*384*) This provision was based on the Commission's belief that consumers do not understand the R-value concept, a belief which is fully supported on the record, and on the view that the market has contributed directly to this lack of understanding by failing to educate and inform consumers about insulation R-values.(*385*)

In light of this fact, there was general agreement that R-value disclosures should be accompanied by an explanation of the term.(*386*) However, the disclosure initially proposed by the Commission was criticized because it erroneously implied a direct correlation between adding insulation and saving fuel.(*387*) The explanation in the Rule now states: "The higher the R-value, the greater the insulating power. Ask your seller for the fact sheet on R-values."(*388*) The first sentence of this disclosure explains the R-value concept correctly and succinctly. The second sentence, as noted earlier, is a necessary component of the Commission's effort to provide consumers with pre-purchase R-value information.(*389*)

As initially proposed, the R-value explanation was to be required in ads for only a one-year period.(*390*) Since insulation is a very infrequently purchased commodity, (*391*) however, the Commission is uncertain that the R-value concept will become widely and permanently understood in a short period of time. Unfortunately, the record does not provide a basis for selecting a longer period of time, such as three or five years. In light of this fact, the Rule does not indicate any expiration date for the R-value explanation disclosure in ads. Nevertheless, the Commission intends to conduct a survey several years from now, and will then reexamine the need for a continuation of the R-value explanation in insulation ads.

3. *Other disclosures.* As the discussion in Section II.C.2.a noted, the R-values achieved by consumers who purchase urea-formaldehyde foam insulation will be lower than the tested R-value.(*392*) This occurs because current testing practices for these materials do not take shrinkage into account.(*393*) Absent a disclosure of the effects of shrinkage, ads that state urea-formaldehyde foam R-values will always deceive consumers. The Commission's Rule therefore requires a skrinkage disclosure, or a reduction in the claimed R-value to account for this factor,(*394*) whenever ads for the product mention its R-value.(*395*)

E. *Savings Claims.* As noted in Section I.E.2 of this statement, the evidence shows that many industry members are making savings claims for their products. Some of these claims are general in nature, stating that consumers can cut their fuel bills by installing insulation.(*396*) Others refer specifically to a dollar amount or percentage by which fuel bills can be reduced.(*397*)

It seems obvious that a consumer's purpose in buying insulation is to reduce fuel use and, consequently, fuel bills.(*398*) Savings claims, then, are not mere "puffing" by the advertiser, which no one expects the consumer to believe. Rather, the claims are designed to persuade consumers to purchase the products. Yet, because so many factors affect the savings achieved by an individual homeowner,(*399*) any savings claim is untrue with respect to many consumers. In other words, those

consumers who save will do so as a function of their own particular circumstances, and are unlikely to save the amount represented by the advertiser.(*400*) Moreover, as noted earlier, some consumers will save little or no fuel by adding insulation to their homes.(*401*)

To remedy this problem, the staff originally recommended that savings claims include a series of disclosures designed to inform consumers of the particular circumstances under which the advertised savings were achieved.(*402*) The Commission has decided against this approach for two reasons. First, the length and detail of the disclosures would possibly overburden the ad and, as a result, unduly discourage savings claims in advertisements.(*403*) Second, it could be very difficult for consumers to absorb and comprehend this amount of information in the usually modest amount of advertising space or time available to insulation advertisers, most of which (except for the mineral wool manufacturers, as discussed above) are quite small. Third, even if the staff's proposed disclosures could be adequately presented and absorbed most of the time, the Commission does not believe that consumers could use the disclosed information to evaluate the claim.(*404*)

Instead of the approach suggested by the staff, the Commission has adopted a much simpler and far less burdensome disclosure provision. This provision is based on the conclusion that, to remedy the deception inherent in savings claims, consumers must be told that savings depend on many factors, and what those factors are. Since a disclosure containing all of this information would be lengthy, however, section 460.19(b) of the Rule simply requires a brief statement that savings vary and a reference to the fact sheets for further information.(*405*) A detailed enumeration of the factors that affect fuel savings is required in the fact sheets, where space limitations are not so serious a problem.(*406*) The Commission believes that this disclosure provision will serve as an effective remedy for the misleading nature of savings claims, and will also contribute to the Rule's overall pre-purchase disclosure mechanism.(*407*)

In light of the evidence that some savings claims are unsubstantiated, and in accordance with the principles announced in the *Pfizer* decision,(*408*) the Rule also requires that industry members have a reasonable basis for such claims.(*409*) Since the record indicates that the state of the art in savings claim substantiation is developing,(*410*) it is not possible to specify in the Rule precisely what would be an acceptable basis for the variety of possible claims. It is clear that scientifically reliable measurements of fuel use in actual houses, or reliable computer models or methods of heat flow calculation, would meet the reasonable basis requirement imposed by the Rule. However, the Commission cautions advertisers that the language used in a savings claim will influence the level of substantiation required. Thus, an advertiser who claims that adding insulation will "slash fuel bills," or "cut fuel use in half," will be required to produce competent and reliable scientific proof that such high levels of savings will be achieved.

The record also indicates that some industry members claim that a combination of products, such as attic insulation and storm doors, will combine to reduce fuel use.(*411*) At least in some cases, one of the products results in substantially greater savings than the other or others in the combination.(*412*) Since savings claim substantiation is still a developing technology, however, it is not always possible to determine precisely how much of the savings was attributable to each product.(*413*) As a result, the Rule requires that savings claims for more than one product disclose the combination of products used.(*414*) The ad must also indicate how much of the savings came from each product. However, if the exact or approximate contributions of the products cannot be ascertained under available technologies, the advertiser may rank the products in order of their relative degrees of contribution.(*415*) This disclosure, while imperfect, will at least apprise consumers of the fact that not all of the products in the combination contributed equally to the savings achieved.

F. *Miscellaneous Provisions.* 1. *R-value per inch claims.* Since the record demonstrates that R-values are not linear,(*416*) ads, labels, and other promotional materials that express a product's thermal resistance in terms of its R-value per inch deceive consumers.(*417*) In addition, the Commission believes that references to the R-value for a one-inch thickness of the material will encourage consumers to think that it is appropriate to multiply this figure by the desired number of inches, as though the R-value per inch was constant. Section 460.20 consequently prohibits unqualified R-value per inch claims or references to the R-value for one inch of the material, unless the product is recommended for use at a one-inch thickness(*418*) or actual test results prove that its R-value per inch does not drop at increased thicknesses. However, the section provides an alternative to industry members who wish to refer to a product's R-value per inch. The Rule permits these industry members to state a range of R-values per inch, if the claim is accompanied by an explanation of the inverse relationship between thickness and R-value.(*419*)

2. *Certification claims.* Although the proposed rule did not treat false governmental certification claims, ads on the record reveal that manufacturers sometimes deceptively associate their products with federal agencies.(*420*) While an insulation material may meet federal procurement standards, no product is certified or recommended by the government for private use.(*421*) The Rule therefore prohibits false representations that governmental agencies use, certify, recommend, or otherwise favor a product, or that the product complies with a government standard or specification.(*422*)

3. *Tax claims.* The record also contains evidence that industry members deceptively suggested to consumers that products were eligible for federal tax credits before the tax credit had been passed by Congress.(*423*) In addition, now that the tax credit legislation is in effect, the Commission is concerned that some products which are not eligible for tax credits may be advertised deceptively. The Commission therefore concludes that it is necessary to prohibit false claims that a product is eligible for tax credits. This conclusion is reflected in § 460.22 of the Rule.

4. *Clear and conspicuous requirement.* Section 460.10 of the Rule restates the Commission's long-standing view that affirmative disclosures must be made clearly and conspicuously, if they are to remedy the unfair or deceptive practices to which they relate. The determination that a disclosure is clear and conspicuous rests on a variety of factors. However, the Rule states that, among other things, the Commission's previous Enforcement Policy Statements for Foreign Language Advertising(*424*) and for Clear and Conspicuous Disclosures in Television Advertising,(*425*) both of which are appended to the Rule, must be followed.

There is one important exception to the requirement that television advertisers must adhere to the Commission's earlier Enforcement Policy Statement. The Statement would require, for TV ads, that any disclosures mandated by the Rule be made in print

with a voice-over. Although the Commission believes that this provision generally is appropriate, the voice-over requirement must be tempered by practical considerations of the cost it imposes upon advertisers. In this case, the Commission has decided to require a voice-over only for the R-value explanation and the savings disclaimer. These are the most important disclosures in the Rule and, since they will contribute significantly to the Rule's pre-purchase disclosure scheme, they should be made in the most effective manner possible. With respect to other disclosures required by the Rule, the Commission has concluded, on balance, that the benefits provided by a voice-over would be outweighed by the costs to advertisers of complying with such a requirement.(*426*)

G. *Preemptive Effect of the Rule.* In § 460.23 of the Rule, the Commission has indicated the extent to which state and local laws and regulations are preempted by the Rule. The Commission does not believe it appropriate for it to preempt incipient efforts to experiment with alternative forms of consumer protection in areas covered by the Rule, except to the extent necessary to prevent frustration of the Commission's own efforts.

The determination that a state law does or does not "frustrate the purposes of" the Commission's Rule will not be a simple one. For example, while some additional disclosures mandated by a state law could be helpful to consumers, a state law that mandates excessive disclosures by insulation marketers could seriously disrupt the Commission's pre-purchase disclosure provisions. This is a determination that will have to be made on a case-by-case basis, as provided in the Rule. On the other hand, less stringent testing requirements for insulation materials would clearly be preempted by § 460.23(b).

The Commission has specified in § 460.23(b) of the Rule that state or local governmental entities may petition the Commission, for good cause, to obtain an exemption for statutory or regulatory provisions that would otherwise be preempted. Any action by the Commission to grant such an exemption petition will be conducted in accordance with 5 U.S.C. section 553.(*427*) It should be emphasized that only state or local governmental entities may request exemptions under § 460.23(b). Insulation manufacturers and other private parties may not avail themselves of this process. Since the determination to grant an exemption will necessarily place the primary enforcement burden on the state to enforce its provision, the decision to seek an exemption should be made solely by the state entity involved.(*428*)

H. *Economic Impact on Small Businesses and Consumers.* The Commission's objective in fashioning a final rule in this proceeding has been wherever possible, to select the least restrictive alternative for providing essential information and protection to the insulation consumer. Based on the proposals and choices available to it, the Commission believes that it has been successful in achieving this goal. As a consequence, the Rule generally provides significant benefits to both consumers and competitors, at a minimal cost to the industry. In this regard, this section briefly sets forth the benefits and burdens likely to be associated with the Rule.

One cost associated with the Rule derives from the testing provisions. Some manufacturers are already testing at representative thickness, in conformance with the tests prescribed by the Rule. The record indicates that these tests are not unduly expensive.(*429*) In addition, several other manufacturers also have already been testing their R-values, but under different procedures than those required by the Rule. However, there is no reason to believe that compliance with the required tests will impose significantly higher costs than those associated with thin-sampling testing. In short, testing is an inherent burden assumed by a manufacturer who wishes to market an insulation product, and frequently is already done to meet the requirements of many existing industry and governmental specifications, such as the federal government's procurement specifications. Further, since the 60-day retesting provision originally recommended by the staff has been deleted, the Commission does not believe that the testing requirements will impose significant new costs on manufacturers. Nor are the Rule's recordkeeping requirements apparently considered burdensome by industry members; no participants commented on the recordkeeping provisions of the rule initially proposed by the Commission.

On the other hand, home insulation consumers will derive considerable benefit from the testing provisions. R-value claims will now reflect, as accurately as current technology permits, the effects of temperature, increased thickness, settling, shrinkage, and aging on the thermal performance consumers can expect. In addition, all R-values will be determined on a standardized basis, so that competing products can be compared and rationally evaluated by consumers. Without these Rule provisions, many consumers will continue to make erroneous and costly purchasing decisions, because the R-values they are comparing will not be comparable. With standardized, comparative R-value information, consumers will be better able to select the product with the optimal R-value for their needs. Further, in many cases, R-value competition also should redound to the benefit of smaller manufacturers whose products often compare well on an R-value basis with those manufactured by the dominant members of the industry. As a result, the Rule should provide real market incentives to small manufacturers and enhance competition throughout the industry.

The advertising disclosure provisions also do not impose substantial costs on industry members. The disclosures originally recommended by the staff have been pared down to their essentials, particularly in the area of savings claims. The result is a minimum intrusion on advertising space and time.

The benefits of the advertising provisions are that they eliminate unfairness and deception in the marketplace. Generally, they ensure that consumers have an opportunity to understand and evaluate claims that would otherwise lead to misguided purchasing decisions. For the reasons stated above, they also should allow smaller industry members to compete more effectively with the largest members of the industry. The R-value explanation for advertisements is somewhat different, however. Insofar as it explains the meaning of R-value to consumers, it is a subsidiary disclosure, which is needed to make the R-value disclosure itself meaningful. Insofar as it directs consumers toward fact sheets, it substitutes for a more detailed and costly scheme to ensure that home insulation purchasers get the pre-purchase information they need.

Thus, to the extent that there is a significant new cost placed on industry members under the Rule, it arises in the context of the labeling requirements, and particularly with respect to fact sheets. Most manufacturers already label their products with some information, and many of them follow the federal specification labeling requirements with which the Rule coincides. Thus, while new labels will be required initially, continuous relabeling should not be necessary. In fact, industry members gave strong support to the labeling requirement.(*430*)

and apparently do not view the initial relabeling cost as burdensome.

The fact sheet provision, however, imposes a new cost on manufacturers. As originally recommended by the staff, this requirement could have been very costly, for a number of reasons. First, separate fact sheets would have been required not only for each different product, but for varying sizes of the same product. Second, the coverage chart data on the fact sheets would not always have been identical to that on the product's label. As a result, many manufacturers would have been forced to generate new data in order to comply with the fact sheet requirement. Third, the staff recommended that each consumer be given at least one fact sheet, and suggested that a fact sheet might be needed with each *package* of insulation sold.(*431*)

In response to comments on the staff's recommendations, and out of its own concern to minimize any compliance costs associated with the Rule, the Commission has modified the fact sheet sections. As noted earlier, the coverage chart data on fact sheets is identical to that on the product's label so that any costs of generating new information have been eliminated. The Rule also permits consolidation of fact sheets for similar products, thus reducing the number of different fact sheets that any individual manufacturer must produce. Moreover, the Rule will not require that each individual consumer be given a fact sheet. Rather, under the modified binder system approach adopted by the Commission, a relatively small number of fact sheets would suffice for binder purposes. Indeed, for the small businesses which operate in localized areas, a handful of fact sheets may be enough. Based on its experience under the Warranty Rules,(*432*) the Commission believes that the cost of preparing and distributing fact sheets, for any individual manufacturer, will not be burdensome.

The benefits derived from fact sheets, as noted earlier, are that consumers will be provided with information which the record shows is essential in the context of a home insulation purchasing decision. Through this provision of the Rule, consumers will have available to them a tool that permits them to compare the thermal performance features of insulation materials based on full and complete information, and thereby to participate effectively in the national program of energy conservation.

I. *Readability of the Rule.* With the adoption of this Rule, the Commission again realizes its goal of writing understandable regulations.(*433*) The Commission has for some time required that disclosures to consumers be written in plain and easily understandable language. Likewise, the consumer disclosures required under this Rule for fact sheets and advertisements have been carefully written and reviewed by readability experts to ensure that the intended message will be conveyed in a clear and succinct manner.

Of even greater significance, however, is the fact that the Rule itself is written in understandable language. This reflects the Commission's commitment to the principle that regulations which apply to the actions of small businesses should be readily understood by such persons. After reviewing the language of the Rule carefully, the Commission is convinced that its provisions will be understood by the affected industry members.

Footnotes

1. 42 FR 59678 (1977).
2. 16 CFR 1.20 (1978).
3. 42 FR 59678, 59679 (1977). The most significant departure from previous rulemaking procedures was the abandonment of the two-notice procedure for the designation of disputed issues of material fact. For a discussion of this point and of the other procedures followed, see Report of the Presiding Officer on Proposed Trade Regulation Rule Concerning Thermal Insulation 1–4, 7–8 (1978) [hereinafter cited as Presiding Officer's Report].
4. *See* Presiding Officer's Report at 3–4.
5. 42 FR 59678 (1977).
6. *Id.; see* Presiding Officer's Report at 6. A transcript of the proceedings was filed in Category L of the rulemaking record, and appears in volumes 215–59–1–2–8 through 215–59–1–2–21.
7. *See* Presiding Officer's Report at 4.
8. *Id.* at 5–6.
9. The designated groups were as follows: (1) Consumer Group; (2) Environmental Group; (3) Cellulose Group; (4) User Group; (5) Mineral Wool Group; (6) Plastics Group; (7) Government Group; (8) Urea-formaldehyde Foam Group; and (9) Aluminum Group. *Id.*
10. Federal Trade Commission, Bureau of Consumer Protection, Staff Report on Labeling and Advertising of Home Insulation and Proposed Trade Regulation Rule (1978) [hereinafter cited as Staff Report]. For the sake of convenience, many of the citations in this Statement are to the Staff Report. However, the Commission notes that the Staff Report recounts and summarizes the record evidence.
11. *See generally* Presiding Officer's Report at 8–22.
12. 42 FR 59678, 59684–85 (1977).
13. 43 FR 32142 (1978).
14. 43 FR 37203 (1978).
15. These comments were filed in Category P of the rulemaking record, and appear in volumes 215–59–1–2–26 through 215–59–1–2–8.
16. 16 CFR 1.13 (1978) authorized oral presentations to the Commission in rulemaking proceedings. *See* 43 Fed. Reg. 51038 (1978). Although the oral presentation meeting was originally scheduled for November 15, 1978, several participants requested an extension of time in order to prepare for the meeting. *See* motions of Aluminum Ass'n and Borden, Inc., A–13; Environmental and Consumer Groups, A–14. To give the participants an opportunity to digest the staff's recommendations completely, the Commission postponed the meeting until November 21, 1978. *See id.*
17. With the exception of reflective foil, all of the insulations covered by the rule are "mass" insulations. Staff Report at 6.
18. *Id.* at 61.
19. *Id.* at 7 n.14.
20. *Id.* at 6–7; Final Trade Regulation Rule § 460.2 [hereinafter cited as TRR].
21. The term "retrofit" refers to applications in which insulation is added to a house that is already occupied.
22. Staff Report at 7–9.
23. *Id.* at 10–13.
24. *Id.* at 20–21.
25. *Id.* at 15–18.
26. *Id.* at 14–15.
27. *Id.* at 19.
28. *Id.* at 19–20.
29. *Id.*
30. *Id.* at 8; *see id.* at 11.
31. *See id.* at 11, 12.
32. *See id.* at 10, 15–18, 20, 21.
33. These procedures are discussed in greater detail in Section II.B, *infra.*
34. Staff Report at 26.
35. *Id.*
36. *Id.;* Tye, M/809.
37. Tye, M/809.
38. Staff Report at 27.
39. *Id.* at 34.
40. *Id.* Industry members agreed that a product's R-value can be raised 10–30% by decreasing the temperature to which the material is exposed. *Id.* n.220.
41. *Id.* at 63–64.
42. *Id.*
43. *See id.* at 194–95.
44. *Id.* at 33.
45. *Id.* at 33–34.
46. *See id.* at 33; Polycell Industries, Inc., P–69 at 5.
47. Staff Report at 34.
48. *Id.* at 33.
49. *See, e.g.,* Dow Chemical Co., P–61 at 7; Naval Construction Battalion Center, P–70 at 1; California Energy Resources Commission, P–82 at 1. Under this procedure, the test sample is aged for 90 days at 140°F, under conditions of intended use. HH–I–530A, ¶4.6.4, L/3227, 3236.
50. Staff Report at 31–32.
51. Owens-Corning Fiberglas Corp., L/222, T/123, P–96 at 39.
52. Staff Report at 37.
53. *Id.*
54. *Id.*
55. *Id.* at 63.
56. *Id.*
57. *Id.* GSA has proposed a new specification for loose-fill mineral wool, which includes a settled density test. *Id.* n. 398. Despite the absence of an accepted settling procedure for their products, the mineral wool manufacturers contend that the coverage charts on their package labels take settling into account. According to these

manufacturers, if the material is installed in accordance with the coverage chart, the represented R-value will be attained. *See* O. Richards, T/130–31; Mineral Insulation Manufacturers' Ass'n, P–79 at 7–8; Owens-Corning Fiberglas Corp., P–96 at 37–38.

58. This document is HH–I–515D, L/3131.

59. *Id.* ¶ 4.5.1, L/3135–36.

60. Staff Report at 44.

61. *Id.*

62. *Id.*

63. *Id.* at 46.

65. *Id.* at 47.

66. *Id.* at 48–49.

67. *Id.* at 49.

68. *Id.* at 49–50.

69. *Id.* at 50–52.

70. *Id.* at 50–51.

71. *Id.* at 50 nn.333–34.

72. *Id.*

73. *Id.* at 51.

73a. For example, the temperature and humidity at the time of installation, as well as the quality of the on-site formulation and application, can affect the level of shrinkage. *See id.* at 45.

74 *Id.* at 53.

75. *Id.*

76. *Id.*

77. *Id.* at 53–54.

78. *Id.* at 58.

79. *Id.* at 55, 57–58.

80 *Id.* at 57.

81. The term "derating" refers to a reduction in the tested R-value of a product.

82. *Id.* at 58.

83. *Id.*

84. *Id.* at 59.

85. *Id.* at 1.

86. *Id.*

87. Energy Tax Act of 1978, Pub. L. No. 95–618, § 101, 92 Stat. 3174 (1978). Purchasers of specified energy conservation measures are entitled to a tax credit in the amount of 15% of the first $2.000 expended.

88. National Energy Conservation Policy Act, Pub. L. No. 95–619, § 212, 92 Stat. 3211 (1978).

89. *See* Staff Report at 110–11.

90. Energy Conservation in Existing Buildings Act of 1976, 42 U.S.C. §§ 6861 *et seq.* (1976), *as amended by* National Energy Conservation Policy Act, Pub. L. No. 95–619, § 231, 92 Stat. 3224 (1978). The Farmers Home Administration is now developing a similar program for low-income families in rural areas. National Energy Conservation Policy Act, Pub. L. No. 95–619, § 232, 92 Stat. 3226 (1978).

91. *See* HUD, Interim Rule on Increases in Thermal Requirements for HUD Minimum Property Standards, 44 Fed. Reg. 22444 (1979); FMHA, Thermal Performance Standards, 42 Fed Reg. 56444 (1977).

92. Staff Report at 5.

93. *Id.*

94. *Id.* at 101.

95. *Id.*

96. *Id.*

97. *Id.* at 101–02.

98. *Id.* at 5.

99. *Id.* at 103.

100. *Id.*

101. *Id.* at 101, 113. One participant suggested that insulation purchases could cost between $400 and $1,600. California Dep't of Consumer Affairs, L/1655.

102. Staff Report at 114.

103. *Id.* at 108–09, 114–15.

104 Proposed Rule § 460.4(a), 42 FR 59678, 59680 (1977).

105. *See Id.* at 59691.

106. Staff Report at 208009.

107. *Id.* at 105–06.

108. *See generally id.* at 7–21.

109. *See* text accompanying note 137 *infra.*

110. W. R. Grace & Co., I/316; *see* Staff Report at 208–09.

111. *See* Staff Report at 116–19.

112. *Id.* at 117–18.

113. *Id.* at C–1.

114. *See* Environmental Group, M/509–14.

115. *Id.* at 511.

116. Staff Report at 106.

117. Rather than restraints, there have been pressures to disclose R-value emanating from a few trade associations and the General Services Administration. *See id.* at 155–56, 168–71. As the record shows, these pressures have been largely ineffective.

118. *See* text accompanying note 88 *supra.*

119. *See* Statement of Basis and Purpose, Trade Regulation Rule Concerning Unfair or Deceptive Advertising and Labeling of Cigarettes in Relation to Health Hazards of Smoking, 29 FR 8324, 8355 (1964); FTC v. Sperry & Hutchinson Co., 405 U.S. 233, 244–45 & n.5 (1972).

120. *See* Section III.B.1, *infra.*

121. The Commission recognized the economic injury that derives from consumer search in Pfizer, Inc., 81 F.T.C. 23, 61–62 (1972).

122. *See id.* at 62–63.

123. Staff Report at 208–09.

124. *See, e.g.,* Fair Packaging and Labeling Act, 15 U.S.C. §§ 1451 *et seq.* (1976) (label disclosures of package contents); Truth-in-Lending Act, 15 U.S.C. §§ 1601 *et seq.* (1976) (consumer credit disclosures); Interstate Land Sales Full Disclosure Act, 15 U.S.C. §§ 1701 *et seq.* (1976) (disclosure of facts regarding land offered for sale); Securities Act of 1933, 15 U.S.C. §§ 77a *et seq.* (1976); Securities Exchange Act of 1934, 15 U.S.C. § 77b (1976).

125. *See* Statement of Basis and Purpose in Trade Regulation Rule Concerning Advertising of Ophthalmic Goods and Services, 43 FR 23992, 24001 (1978).

126. This strong public policy has been articulated in many places, including the Energy Policy and Conservation Act, 42 U.S.C. §§ 6201 *et seq.* (1976); Energy Conservation and Production Act, 42 U.S.C. §§ 6801 *et seq.* (1976); Petroleum Marketing Practices Act, 15 U.S.C. 2801 *et seq.* (Supp., 1979); National Energy Conservation Policy Act, Pub. L. No. 95–619, 92 Stat. 3206 (1978).

127. It is interesting to note that Congress has, on several occasions, chosen to promote energy conservation through required informational disclosures to consumers. *See, e.g.,* Rules Governing the Certification and Posting of Octane Ratings Under Title II of the Petroleum Marketing Practices Act, 16 C.F.R. Part 306 (1979); Proposed Rules for Disclosure of Energy Cost and Consumption Information in Labeling and Advertising of Consumer Appliances Under the Energy Policy and Conservation Act, 43 FR 31806 (1978).

128. Statement of Basis and Purpose of Trade Regulation Rule for the Prevention of Unfair or Deceptive Advertising and Labeling of Cigarettes in Relation to the Health Hazards of Smoking 88–89 (1964), and cases cited herein.

129. *See* Staff Report at 26–27, 208009, 241–42; Council of Better Business Bureaus, L/1287; SAI Corp., T/2066; Cellutron Products Corp., T/2690.

130. Advertisements, H/1052; H/1071; H/1082; H/1110; H/1145; H/1148; H/1155; H/2097; M/559; M/560; M/561; M/564; M/565; M/649; M/1209; M/1210.

131. *See* text accompanying notes 114–16 *supra.*

132. *See* Environmental Group, M/509–14.

133. *See* Staff Report at 101.

134. Approximately two-thirds of the home insulation market is held by the 3 fiberglass manufacturers. *See* Staff Memorandum to Commission, dated January 11, 1979, at 1. Most of the insulation produced by these companies is in the form of batts and blankets of specified thicknesses. *See* Staff Report at 7.

135. Sources cited note 129 *supra.*

136. *See generally* Staff Report at 7–21.

137. At a cost of $100, a consumer might be able to insulate 50 square feet of space to a level of R–10, or 100 square feet to a level of R–5, or 200 square feet to a level of R–2.5.

138. Staff Report at 120–22.

139. *Id.* at 121.

140. *Id.* at 121–23.

141. *Id.* at 61–62, 122.

142. Advertisements, M/1071; M/1092; M/1105; M/1109; M/1111; M/1127; M/1185.

143. Staff Report at 122–23.

144. *Id.* at 123.

145. *Id.* at 126–28.

146. *See id.*

147. *See* text accompanying notes 111–15 *supra.*

148. Staff Report at 106.

149. *Id.* at 123.

150. The specific circumstances in which the *R*-value explanation must appear are discussed later in this Statement.

151. Section 18(a)(1)(B) of the FTC Act states that the Commission's rulemaking authority includes the authority to impose "requirements prescribed for the purpose of preventing" unfair or deceptive acts or practices.

152. Staff Report at 129, C–2.

153. *Id.* at 130–31.

154. *Id.*

155. *Id.*

156. *Id.* at 108.

157. *Id.* at 109, 133–35, C–2.

158. *See id.* at 133–35, C–2.

159. *Id.* at 107. Several participants suggested that, under certain circumstances, adding insulation could actually increase fuel costs. *See* National Ass'n of Home Manufacturer, T/1338–40; Brick Institute of America, P–98 at 4. Others agreed that once a minimum level of insulation is achieved, the savings that can be derived from additional insulation is negligible or non-existent. *See* Consumers Union, D/11; Chevron Study, H/1622–24; Dow Chemical Co., I/245–46; Mobay Chemical Corp., I/415; National Ass'n of Home Manufacturers, L/199; Council of Better Business Bureaus, L/1288; Environmental Group, L/1604; National Consumers League, L/1714; Consumer

Federation of America, L/5149; Arizona Consumers Council, T/1792; Cellulose Insulation Manufacturers' Ass'n, T/2748.

160. Staff Report at 140.

161. *Id.*

162. *See id.*

163. *Id.* at 142.

164. *Id.*

165. The volume of consumer complaints unearthed in this proceeding was relatively small. *See id.* at 104–05. However, home insulation is not the kind of product that can be readily evaluated even by knowledgeable consumers, and few consumers are informed concerning product attributes. *See* text accompanying notes 101–03 *supra*. As a result, state consumer protection officials generally agreed that, in this industry, the volume of consumer complaints is a poor indicator of the prevalence of consumer abuses. *See* Staff Report at 104–05.

166. The record contains a great deal of such promotional material. *See* Staff Report at App. C, App. D.

167. *Id.* at 179 nn.1167–68.

168. *See* text accompanying notes 86, 92–93 *supra*. This figure does not even include the numerous consumers who buy insulation in other ways, such as through the purchase of a new home.

169. TRR § 460.2. Several participants suggested that the Commission exclude new homes from the scope of its Rule. The Commission has decided to include new homes, for the reasons discussed in Section III.C.3, *infra*.

170. Pipe insulation, which has unique qualities and is generally installed only by professionals, is excluded from the Rule. TRR § 460.2; *see* Staff Report at 21–22, 188. Similarly, of the various kinds of duct installation, only duct wrap is used extensively in the residential setting. *See id.* at 7 n.13; Owens-Corning Fiberglas Corp., P–96 at 5–6. As a result, § 460.2 of the Rule excludes all kinds of duct insulation other than duct wrap.

171. Staff Report at 186 n.1196. For a discussion of these products, see *id.* at 22–25.

172. *See id.* at 19; 3M Company, I–14.

173. 42 F. R. 59678 (1977).

174. Section 460.3 clarifies who is covered by the Rule. In general, all members of the home insulation industry, including utility companies and trade associations, are covered by the Rule. In addition, advertising agencies, testing labs, and sellers of new homes are covered, insorfar as they are engaged in activities in the home insulation area.

175. The Commission has determined, in other contexts, that one who furnishes retailers with the means of deceiving the public violates the FTC Act. *See, e.g.*, Baltimore Luggage Co. v. FTC, 296 F.2d 608 (4th Cir. 1961); Clinton Watch Co. v. FTC, 291 F.2d 838 (7th Cir. 1961); Riviera Trading Corp., 63 F.T.C. 114 (1963). The last paragraph of § 460.4 clarifies the application of this priniciple to testing labs with respect to testing services that they perform for manufacturers. They must follow the provisions of the Rule when they test home insulation materials. The assumption behind this provision is that test results supplied by a lab will be used as the basis for a manufacturer's claims. However, a manufacturer may wish to depart from the testing procedures at times, in order to observe the product's performance under specified conditions. Section 460.4 permits such activities by testing labs, as long as they have been informed in writing that promotional materials for the insulation will not be based on the test results.

176. *See* Owens-Corning Fiberglas Corp., P–96 at 7–8.

177. Staff Report at 69, 190; *see* Initial Staff Memorandum, B–1 at 4.

178. Staff Report at 190.

179. *Id.* at 34–35, 194.

180. *See id.* at 33–34, 42–43, 53–60, 63, 195, 228.

181. Staff Report at 67, 190–191.

182. Thus, the testing requirement imposed here is consistent with the Commission's position in Pfizer, Inc., 81 F.T.C. 23 (1972). There, the Commission held that it was both unfair and deceptive, within the meaning of section 5 of the FTC Act, for an advertiser to make a claim for which the advertiser did not have substantiation at the time the claim was made. *Id.* at 64. In fact, the *Pfizer* opinion emphasized that the unfairness of not having substantiation was particularly evident in the case of complex products, with respect to which consumers cannot practically ascertain the truthfulness of claims before sale. *Id.* at 61.

183. In addition to these test methods, the proposed rule also allowed the use of ASTM C653 and C687, test standards specially designed for low-density blanket and loose-fill insulations. 42 Fed. Reg. 58678, 59679 (1977). In light of the record evidence that these standards are not longer appropriate means of determining R-value, *see* Staff Report at 191, they have been deleted from the Rule. The proposed rule also specified ASTM C335 and C691 for pipe insulations. 42 Fed. Reg. 59678, 59679 (1977). Since pipe insulation have been excluded from the Rule's coverage, these tests have been deleted. *See* note 171 *supra*.

184. For a discussion of the ASTM procedures for adopting test standards, see Staff Report at 65; Tye Report, H/1916; Tye, T/215–19. Until now, the use of these test methods has been strictly voluntary. Staff Report at 66.

185. Staff Report at 66.

186. *Id.* However, the "calibrated hot box," when it becomes an ASTM standard test method, will take transient environmental factors into account. *Id.* at 84–85. Since the record indicates that this test method will provide the most accurate R-values possible, *id.*, § 460.5(a) of the Rule states that the calibrated hot box will be a permissible test method once it becomes an ASTM standard test method.

187. Staff Report at 66.

188. *Id.* at 67.

189. For a discussion of the specific levels of accurary and reproducibility for C177, C518, and C236, see *id.* at 70–71, 74–77.

190. A "systems" test is one in which an assembly of materials, such as a built-up wall section, is tested. In contrast, the C177 and C518 methods are used to test only the insulation material itself.

191. ASTM C236 is discussed in Section II.B.3, *infra*, which covers the R-value testing requirements for foil insulations.

192. *See* Sections I.C.1, II.B.1.c, *supra*.

193. Contrary to allegations made during the proceeding, the 1976 revisions to C177 and C518 were not suspended and are currently in effect. Staff Report at 81.

194. *Id.* at 62, 68.

195. "Representative thickness," as defined in the test methods and in § 460.6 of the Rule, means a thickness at which the material's R-value per unit will vary no more than ±2% with increases in thickness.

196. Staff Report at 192.

197. *See id.* at 192–93; U.S. Gypsum Co., P–41 at 3; Dow Chemical Co., P–61 at 7; Johns-Manville Sales Corp., P–64 at 2–5; Rock Wool Mfg. Co., P–89 at 2; Oren Corp., P–94 at 1; Owens-Corning Fiberglas Corp., P–96 at 8–11, 13; CertainTeed Corp., P–100 at 3–4; NAHB Research Foundation, P–105 at 2–3.

198. Staff Report at 192–93; *see* U.S. Gypsum Co., P–41 at 3; Dow Chemical Co., P–61 at 7; Johns-Manville Sales Corp., P–64 at 2–5; Rock Wool Mfg. Co., P–89 at 2; Owens-Corning Fiberglas Corp., P–96 at 13; CertainTeed Corp., P–100 at 3–4, NAHB Research Foundation, P–105 at 2–3.

199. *See* R.P. Tye, T/204, M/717.

200. *See* Staff Report at 82–83; Johns-Manville Sales Corp., P–64 at 4. This was the variation between the results achieved by Dynatech Laboratories and the National Research Council of Canada. *Id.* However, the variation between the results achieved by Dynatech and the other American labs was approximately 1.5%. *See* R.P. Tye, M/717.

201. Staff Report at 82–83.

202. *Id.*

203. *Id.* at 26–27; R.P. Tye, M/718, 809.

204. *See* Staff Report at 83–84, 193. *See generally* Section II.B.5, *infra*.

205. For example, despite the staff's earlier recommendation that representative thickness testing be implemented immediately, the representative for cellulose manufacturers commented only that a delay was needed so that manufacturers could complete their initial round of representative thickness testing. Cellulose Insulation Manufacturers' Ass'n, P–88 at 4. Manufacturers in other segments of the industry also did not question the propriety of a representative thickness testing requirement.

206. *See* ASTM C687–71, Standard Recommended Practice for Determination of the Thermal Resistance of Low-Density Fibrous Loose Fill-Type Building Insulation, H/458. Thus, the witness for Johns-Manville testified that the company's loose-fill product is normally tested at a 6-inch thickness, and that these tests form the basis for the company's R-value claims to consumers. T/476–77. Similarly, Rockwool Industries tests its loose-fill at a representative thickness. L/4657–58.

207. *See* ASTM C739–73, Standard Specification for Cellulosic Fiber (Wood-Base) Loose-Fill Thermal Insulation, L/2076; National Cellulose Corp., L/4758–59.

208. *See, e.g.*, Johns-Manville Sales Corp., T/468, 478. In fact, both ASTM C687 and C739 indicate that, if a C518 apparatus is used to test thick samples, it should be correlated

with results obtained on C177 or C236 equipment.

209. Use of Materials Bulletin No. 74, ¶6.2.7, 42 Fed. Reg. 55143, 55145 (1977), L/3109, 3111.

210. *See* note 207 *supra;* C. Shirtliffe, M/B14.

211. *Id.;* R.P. Tye, M/716.

212. Staff Report at 193; *see* U.S. Gypsum Co., P–41 at 3; Dow Chemical Co., P–61 at 7; Rock Wool Mfg. Co., P–89 at 2; Oren Corp., P–94 at 1; Owens-Corning Fiberglas Corp., P–96 at 10–11; CertainTeed Corp., P–100 at 3–4.

213. Staff Report at 193.

214. *Id.*

215. *Id.*

216. For example, most cellular plastics boardstock is produced in thicknesses of only an inch or two. Urea-formaldehyde foam typically is installed at a thickness of about 3½ inches. Moreover, the effect of thickness of R-value may level off, for some products, at only a few inches. Thus, R-value tests at greater thicknesses would not be required for these products.

217. *See, e.g.,* R.P. Tye, T/250.

218. Staff Report at 199–202; *id.* at A–3, § 460.7. For further discussion of this point, see text accompanying notes 264–68 *infra.*

219. *See, e.g.,* Cellulose Insulation Manufacturers' Ass'n, P–88 at 4; CertainTeed Corp., P–100 at 6.

220. *See* Staff Memorandum of November 3, 1978, to Commission, Attachment B.

221. Staff Report at 63–64, 194; *see, e.g.,* Polymer Building Systems, P–12 at 1; SPI, P–46 at 4; Environmental Group, P–48 at 4–6; Dow Chemical Co., P–61 at 7; Jim Walter Corp., P–63 at 4; Naval Construction Battalion Center, P–70 at 1; Roy & Sons, Inc., P–87 at 1; R.P. Tye, P–92 at 3.

222. Staff Report at 194–95; *see* Warren Sales Corp., P–6 at 1; Southern Ohio Foam, P–14 at 1–2; ENFO Environmental Systems, P–43 at 1; Polycell Industries, P–69 at 1–3; BASF Wyandotte Corp., P–97 at 2–3.

223. *See* sources cited note 222 *supra.*

224. Post-record comment of Dow Chemical Co., P–61 at 7.

225. Suggested lower temperatures included 25°F, 40°F, and 45°F. *See* Warren Sales Corp., P–6 at 1; Jim Walter Corp., P–63 at 4; Dow Chemical Co., P–67 at 7. *See also* Staff Report at 195.

226. Of course, this means that R-values disclosed to consumers in labels, fact sheets, and ads must be the R-values as tested at 75°F.

227. Staff Report at 195.

228. The aging requirement initially recommended by the staff applied to all types of polystyrene insulation. However, the provision has been limited to extruded polystyrene in light of post-record comments that it is the only type that ages significantly after manufacture. *See, e.g.,* ENFO Environmental Systems, P–43 atl; SPI, P–46 at 6.

229. "Accelerated aging" involves aging the product for 90 days at 140°F in the form of intended use. *See* GSA Specification HH–I–530A, ¶ 4.6.4, L/3227, 3236; Naval Construction Battalion Center, P–70 at 1; California Energy Resources Commission, P–82 at 1; Dow Chemical Co., P–61 at 7. This accelerated aging process reflects expected performance after 5 years of use. *Id.*

230. *See* U.S. Mineral Products Co., P–11 at 1; Dow Chemical Co., P–61 at 7; Naval Construction Battalion Center, P–70 at 1; California Energy Resources Commission, P–82 at 1.

231. Oral presentation of Society of the Plastics Industry, Inc., Transcript at 55–56.

232. Staff Report at 33.

233. *Id.* at 42–43.

234. HH–I–515D, ¶ 4.5.1, L/3135–36. This specification was pending at the time of the hearings, but was published by GSA in June.

235. Staff Report at A–6, § 460.15(d); *id.* at A–9, § 460.20(f).

236. Staff Report at 63; *see* Naval Construction Battalion Center, P–70 at 2; Oren Corp., P–94 at 2.

237. *See* note 57 *supra* and accompanying text.

238. TRR § 460.5(a).

239. GSA has proposed an amendment that would incorporate a settled density test procedure into its specification for loose-fill mineral wool. HH–I–1030B, L/3272.

240. Staff Report at 76–77. For a discussion of the operation, accuracy, and reproducibility of this method, *see id.* at 77–78.

241. *Id.*

242. The test must be conducted at a mean temperature of 75°F, with a temperature differential of 30°F. TRR § 460.5(b).

243. Staff Report at 196.

244. *Id.* at 197.

245. *Id.*

246. *Id.*

247. The emissivity value of a reflective material represents its ability to retain heat. It has a significant impact on the thermal resistance that is achieved. *See id.* at 19.

248. *Id.* at A–2, § 460.5(a)(3); *see id.* at 196–97.

249. This recommendation received further support in the post-record comments. Simplex Products Group, P–5 at 1.

250. Staff Report at 196–97.

251. *See* Aluminum Ass'n, P–49 at 1; Johns-Manville Sales Corp., P–46 at 2; U.S. Fiber Corp., P–67 at 3; Insulation Contractors of America, P–77 at 3; Rockwool Industries, Inc., P–104 at 4.

252. U.S. Fiber Corp., P–67 at 3. The Aluminum Association suggested in its post-record comment that C835 might be referenced in place of C445. P–49 at 1. However, during its oral presentation to the Commission, the Association recommended that the Rule require emissivity testing under E408 or a comparable method. Transcript at 104–05.

253. The Rule also states that the R-value derived from the ASHRAE tables for a single sheet of aluminum foil must be the R-value listed at 50°F, with a temperature differential of 30°F. The ASHRAE tables do not list a single airspace R-value at 75°F, and this alternative temperature is supported by the record. *See* Staff Report at 197–98. *See also* oral presentation of Aluminum Ass'n, Transcript at 105.

One commenter pointed out that when aluminum foil insulation is installed on the exterior of a wall that already has at least R–11 insulation in it, the temperature differential is less than 30°F. While this may be true, it would be impossible to predict in advance whether the particular insulation product will be installed in such a wall. In other words, the same reasons that support a single test temperature standard, despite the fact that it does not always represent actual environmental conditions, also support the 30°F temperature differential provision.

254. Facings are often used on mineral wool batts and blankets, and on exterior sheathing insulations. *See* Staff Report at 19.

255. For example, if the material R-value of a foam board is 4.0, the system R-value provided by insulation of the board in conjunction with a one-inch airspace would be approximately 6.0 for a wall application. *See* ASHRAE Handbook, H/1272–73.

256. Materials with foil facings must be tested alone (excluding any airspaces) in accordance with § 460.5(a) of the Rule, to establish the material R-value.

257. These alternatives were suggested in the post-record comments. SPI, P–46 at 3–4; Dow Chemical Co., P–61 at 6; Jim Walter Corp., P–63 at 3.

258. SPI, P–46 at 3–4; Dow Chemical Co., P–61 at 6.

259. Staff Report at 198.

260. The ASTM consensus process gives industry members an opportunity to keep abreast of, participate in, and plan for prospective changes in the ASTM test methods. *Id.* at 199. Similarly, changes in the GSA specifications are made with the knowledge and technical assistance of the affected industry. As a result, the Commission believes that, except under unusual circumstances, 90 days will provide industry members with enough time to come into compliance with a test change.

261. Section 18(d)(2)(B) of the FTC Act states: "A substantive amendment to . . . a rule promulgated under subsection (a)(1)(B) shall be prescribed . . . in the same manner as a rule prescribed under such subsection."

262. Staff Report at 88.

263. 42 Fed. Reg. 59678, 59683 (1977) (question 3).

264. Staff Report at 199.

265. *See generally id.* at 88–100.

266. *Id.* at 199.

267. *Id.* at 202. The hearings indicated that periodic retesting is an effective way of detecting changes in R-value caused by production or product variations. *Id.* at 200. However, the staff's selection of a 60-day retesting period was a compromise between extremes of retesting periods that seemed either too lenient or too strict, and is reasonable in the absence of evidence providing a more precise basis for designating a retesting interval. *Id.* at 201.

268. *See, e.g.,* Incel Corp., P–13 at 1; Conwed Corp., P–65 at 2; Polycell Industries, Inc., P–69 at 4; Alfol, Inc., P–81 at 2.

269. Mineral Insulation Manufacturers' Ass'n, P–79 at 5; R.P. Tye, P–92 at 3; Rockwell Industries, Inc., P–104 at 4.

270. TRR § 460.8.

271. *See* Staff Report at 202.

272. Non-manufacturers, on the other hand, may rely on the R-value data provided by the manufacturer, unless they know or should know that the data is incorrect or not based on proper tests. TRR § 460.8.

273. *Id.* § 460.9; *see* Staff Report at 202–03.

274. *Cf.* Proprietary Vocational and Home Study Schools Rule § 438.3(f)(2), 43 FR 60796, 60819–20 (1978).

275. *See* Proposed Rule § 460.4(a), 42 FR 59678, 59680 (1977).

276. *See* Staff Report at 208–13.

277. *Id.* at 209.

278. *Id.* at A–4, § 406.14(b)(1). For air duct insulation, the staff recommended disclosure of the product's R-value and the dimensions of the package. *Id.* at A–5, § 406.14(b)(4).

279. *Id.* at A–4, § 460.14(b)(2). The same information was required to be disclosed at any additional thicknesses listed by the manufacturer. *Id.*

280. *Id.*

281. *Id.* at A–4, § 460.14(b)(3).

282. In particular, these commenters pointed out that the relevant information was not the "dimensions of the package" or "packaged thickness," but the dimensions of the material itself and the amount of material in the package. *See, e.g.*, SPI, P–46 at 11–12; Owens-Corning Fiberglas Corp., P–96 at 26; CertainTeed Corp., P–100 at 8.

283. *See, e.g.*, U.S. Fiber Corp., P–67 at 4; Mineral Insulation Manufacturers' Ass'n, P–88 at 4–5.

284. *See, e.g.*, Incel Corp., P–13 at 2; Conwed Corp., P–65 at 3; Cellulose Insulation Manufacturers' Ass'n, P–88 at 5. This position received further support from the cellulose group during the oral presentations to the Commission. Transcript at 17–18.

285. Dow Chemical, P–61 at 10.

286. Transcript at 57–60 (cellular plastics group); *id.* at 110–11 (aluminum group).

287. There is one exception to this approach. The federal specification for cellulose insulation requires disclosure of the number of bags needed to cover 1,000 square feet. HH–I–515D, ¶ 3.2(e).

While this information may be useful to consumers, the Commission does not deem it essential, since it adds little to the disclosure of the number of square feet covered by the package. In any event, some manufacturers already provide this information on their labels, *e.g.*, Fibertherm label, M/1212; Everguard label, M/1231; Monotherm label, M/1232, and the Commission's Rule will not prohibit them from continuing to do so.

288. *See* text accompanying note 278 *supra*.

289. TRR §§ 460.12(b) (4) & (7).

290. The R-value for one inch of loose-fill fiberglass is approximately 2.2, and the corresponding R-value for loose-fill rockwool is roughly 2.9. Staff Report at 7, 9. Similarly, the R-value for one inch of vermiculite is in the 2.2 range, while an inch of perlite has an R-value of about 2.7. Staff Report at 20–21; Perlite Institute pamphlet, H/669; *see* W. R. Grace & Co., T/557–58 (vermiculite R-value for one inch is 2.8 to 3.0).

291. *See* TRR § 460.12(b)(2).

292. *See id.* § 460.12(b)(5). There is an exception to this provision. The manufacturer may disclose the R-value for only one direction of heat flow, as long as the label clearly and conspicuously states that the product can only be used in that application. *Id.*

293. *See* Staff Report at 19; Jim Walter Corp., I/481, 482, 490.

294. TRR § 460.12(b)(6).

295. The dimensional disclosures are the length, width, and thickness of the insulation in the package, and the number of square feet covered by the package.

296. *See* Staff Report at 209–10.

297. *See id.* at 213–14.

298. *Cf.* TRR § 460.5(a).

299. *Id.* § 460.12(c).

300. *See* Section II.B.1.d, *supra*.

301. There was widespread support for the inclusion of a brief R-value explanation on insulation labels. Staff Report at 215. However, the disclosure originally proposed by the Commission was criticized because it implied that there is a direct correlation between adding insulation and saving fuel. *Id.* The R-value explanation was redrafted in light of these comments.

302. *Id.* at 216.

303. *See id.* at D–1, D–2.

304. Dr. Leland Gallup, L/1744, T/779, 786; Allan Ackerman, T/2529–31, M/30, 34.

305. *See* Staff Report at 149–51; Allan Ackerman, M/33.

306. Staff Report at 217.

307. *Id.*

308. TRR §§ 460.12(d) & (e).

309. The exceptions are discussed in the text accompanying notes 319–34 *infra*.

310. National Retail Hardware Ass'n, T/1503; David Reister, T/2498. Five of the 11 Washington, D.C. area stores surveyed by the Environmental Group keep all or most of their insulation stock in warehouses or other locations inaccessible to consumers. Environmental Group, M/511.

311. *See* Staff Report at 219.

312. Polystrene, polyurethane, and polyisocyanurate boardstock materials are often broken down at the retail level and sold as loose boards. W.R. Grace & Co., I/323; Dow Chemical, I/253.

313. Of course, the relevant labeling information could be stamped on each board individually. However, manufacturers contend that this would be difficult and expensive. *See, e.g.*, W.R. Grace & Co., I/324, T/591, 595–97.

314. The disclosure required by § 460.17 of the Rule occurs after the insulation has been installed. *See* Section II.C.4, *infra*.

315. TRR §§ 460.13(c)(1), 460.13(g) paragraphs 1 & 3. The fact sheets must also state the name and address of the manufacturer, information needed by the Commission for enforcement purposes. In addition, the manufacturer must indicate the type and form of the insulation. Consumers need this information in order to purchase the product. *Id.* §§ 460.13(a) & (b).

316. These products are "manufactured" from component materials at the site of application, and immediately installed by the contractor. *See* Staff Report at 14, 17. Prior to installation, there is never an actual insulation material that can be labeled.

317. TRR § 460.13(c)(1).

318. No coverage area disclosure is necessary with respect to these products, since the installer simply contracts to fill an entire cavity area with a certain R-value and thickness of the material.

319. TRR § 460.13(e).

320. *See* Section I.C.6, *supra*.

321. *See* text accompanying notes 79–84 *supra*.

322. Text accompanying notes 79–82 *supra*.

323. Text accompanying note 83 *supra*.

324. Text accompanying note 84 *supra*.

325. Staff Report at A–6, § 460.15(f); *see* Presiding Officer's Report at 10–12. The disclosure stated, among other things, that the Department of Housing and Urban Development "has found that the actual R-value is 28% below the marked R-value."

326. *See* Presiding Officer's Report at 11; Borden, Inc., P–60 at 24–25.

327. TRR § 460.13(e).

328. *Id.*

329. *Id.*

330. Staff Report at 231–32; Owens-Corning Fiberglas Corp., P–96 at 39.

331. *See* Staff Report at 31–32, 231; Owens-Corning Fiberglas Corp., L/222, T/123, P–96 at 39.

332. *See* Owens-Corning Fiberglas Corp., L/222.

333. Staff Report at 231. The Thermal Insulation Manufacturers Association is in the process of developing such a test for air duct wrap. *Id.*

334. TRR § 460.13(f).

335. Staff Report at A–6, § 460.15(c).

336. *Id.*, § 460.15(e).

337. *Id.*, §§ 460.15(c), (d), & (e).

338. *See* Staff Report at 227–29.

339. *See, e.g.*, Owens-Corning Fiberglas Corp., P–96 at 35 (compression); CertainTeed Corp., P–100 at 9 (compression); Aluminum Ass'n, P–49 at 2 (moisture); Mineral Insulation Manufacturers' Ass'n, P–79 at 7.

340. *Cf.* National Ass'n of Home Insulation Contractors, P–103 at 9–14.

341. *See* Staff Report at A–5, § 460.15.

342. *See id.* at 221 n.1385.

343. TRR § 460.13(c)(2).

344. Of course, different types of loose-fill, such as cellulose and rockwool, would require different fact sheets.

345. *See* Staff Report at A–5, § 460.15. The rule stated that manufacturers must give installers at least one fact sheet for each customer, and that manufacturers who install their own insulation must give each customer a fact sheet. Due to a drafting error, it stated that retailers were to be supplied one fact sheet for *each package* of insulation sold to them.

346. *See, e.g.*, United Stated Mineral Products, P–11 at 2; Johns-Manville Sales Corp., P–64 at 6; Oren Corp., P–94 at 2; CertainTeed Corp., P–100 at 9. Many comments were based on the belief that the recommended rule required one fact sheet for each package of insulation sold. *See* note 345 *supra*.

347. 16 CFR 702 (1978).

348. Owens-Corning Fiberglas Corp., P–96 at 42–44. This was also the approach recommended during the hearings by the National Retail Hardware Association. T/1503–05, 1511–14.

349. TRR § 460.14.

350. *Id.* § 460.15.

351. *See* Section II.D, *infra*.

352. 42 FR 59678, 59683 (1977) (question 4).

353. Staff Report at 145; *see id.* at 234; H & H Housing Research Report, L/2388.

354. *See* Staff Report at 145–47.

355. *Id.* at 234; *see id.*

356. *See* notes 128–27 *supra* and accompanying text.

357. Staff Report at 187, 234. It is noteworthy that the National Association of

Home Builders supported such a requirement. L/193.

358. National Ass'n of Home Manufacturers, L/201–03.

359. National Ass'n of Home Manufacturers, T/1410–11.

360. *See id.* at 1384–93; National Ass'n of Home Builders, T/1351–52. Approximately 20 to 30 states have such codes.

361. National Ass'n of Home Manufacturers, T/1397–98.

362. *See id.* at 1382–83, 1388–92; National Ass'n of Home Builders, T/1336–38, 1351–52, 1392.

363. National Ass'n of Home Manufacturers, T/1400, 1407. Indeed, the witness for NAHB noted that many new home ads simply refer to the thichness of the home's insulation and not its R-value, T/1348–49, thus encouraging consumers to believe that insulation performance can be evaluated on the basis of thickness alone.

364. Staff Report at 234–36.

365. *Id.* at A–8, § 460.18.

366. TRR § 460.16.

367. Many building contracts give the builder a right to substitute equivalent insulation material, if the type contracted for becomes unavailable. National Ass'n of Home Builders, T/1328–31.

368. TRR § 460.16.

369. Staff Report at B–4, § 460.4(c).

370. *Id.* at 237.

371. TRR § 460.15.

372. This is especially true in light of the Commission's decision to allow R-value information for more than one product to be consolidated on one fact sheet. *See* text accompanying notes 343–44 *supra.*

373. The bag count disclosure was suggested primarily by installers, but also by others. *See* Staff Report at 237–38. Since loose-fill products settle after installation, the bag count assures both the consumer and the installer that, according to the manufacturer's coverage chart data, enough insulation was installed to achieve the represented R-value. *See id.*

374. 42 FR 59678, 59680, 59683 (1977) (question 5).

375. *See* Staff Report at 241. Moreover, the Commission cannot determine the accuracy of an R-value claim without knowing the thickness to which it is alleged to correspond.

376. *See* Section II.B.1.b, *supra.*

377. 42 FR 59678, 59680, 59683 (1977) (question 5).

378. For example, at a cost of $100, a consumer might be able to insulate 50 square feet of space to a level of R–10, or 100 square feet to a level of R–5, or 200 square feet to a level of R–2.5. In short, the consumer needs to know that at the stated price and R-value, the entire attic, or half of the attic, or a corner of it, will be insulated. *See* note 143 *supra* and accompanying text.

379. TRR § 460.18(b). If the price is stated in terms of a price per square foot, the consumer can calculate the coverage area, and the coverage area disclosure is no longer required. *Id.*

380. 42 Fed. Reg. 59678, 59680 (1977).

381. E.g., Advertisements, H/1051; H/1062; H/1093; M/585–88; M/1083.

382. *See* text accompanying notes 105–07 *supra.*

383. Although the proposed rule also required a coverage area disclosure, that provision has been dropped. The comparison must be based on equal coverage areas, but the consumer does not need this information in order to evaluate the comparison. On the other hand, the last two sentences of § 460.18(d) make clear that if a comparison claim includes a price, the disclosures required by subsections (b) *and* (d) must be made.

384. 42 FR 59678, 59680 (1977).

385. *See* text accompanying notes 153–55 *supra; see also* Section II.B.1.d.; *supra.*

386. Staff Report at 106.

387. *Id.* at 244.

388. TRR § 460.18(a).

389. *See* text accompanying notes 156, 356 *supra.*

390. 42 FR 59678, 59680 (1977).

391. Staff Report at 101.

392. *See* text accompanying notes 324–29 *supra.*

393. *See* text accompanying note 333 *supra.*

394. The disclosure provision in § 460.18(e) is identical to that in § 460.13(d) on the fact sheets. If UF foam R-values are properly derated to account for shrinkage, then the disclosure is not required.

395. Although consumers should ultimately receive this disclosure via the fact sheets, the ads are nevertheless deceptive without the disclosures. *See* Resort Car Rental System, Inc. v. FTC, 518 F.2d 962 (9th Cir.), *cert. denied sub nom.* Mackenzie v. United States, 423 U.S. 827 (1975); Exposition Press, Inc. v. FTC, 295 F.2d 869 (2d Cir. 1971).

396. Staff Report at C–2.

397. *Id.*

398. *See, e.g.,* Dow Chemical Co., L/131, 132, 134; Georgia Governor's Office of Consumer Affairs, L/160. Center for Public Representation, L/616–17 (Exhibit 1).

399. Staff Report at 108–09.

400. *See id.* at 108, 129–30.

401. *See* Section II.B.2, *supra.*

402. Staff Report at A–10, § 460.21(b). The staff's disclosure requirement would have applied only to savings claims that referred to a specific percentage of fuel saved. *Id.* Nevertheless, the Commission believes that more general claims are equally deceptive, since some consumers will save little or nothing by adding insulation.

The Commission has also rejected the staff's proposed ban on "dollar" savings claims. *Id.* § 460.21(a). The distinctions between dollar claims and other types of savings claims are insufficient to warrant such drastically different treatment, and the Commission believes that the deceptive character of the claims can be cured through the Rule's disclosure provisions.

403. *See, e.g.,* Dow Chemical Co., P–61 at 12; Mineral Insulation Manufacturers' Ass'n, P–79 at 9; Rock Wool Mfg. Co., P–89 at 2; Owens-Corning Fiberglas Co., P–96 at 54–56.

404. Although a consumer could have determined that the circumstances decribed in the ad were similar to his or her own, it would not have been possible to predict the impact of one or more differences between the advertised conditions and the consumer's conditions.

405. The disclosure states: "Savings vary. Find out why in the seller's fact sheet on R-values. Higher R-values mean greater insulating power." TRR § 460.19(b).

406. TRR § 460.13(g), paragraph 2.

407. It is noteworthy that the savings claim disclosure takes precedence over the R-value explanation; that is, if a savings claim also triggers disclosures under § 460.18 of the Rule, the R-value explanation in § 460.18(a) may be omitted. *Id.* § 460.19(d).

408. Pfizer, Inc., 81 F.T.C. 23 (1972).

409. TRR § 460.19(a). However, non-manufacturers may rely on savings claim information provided by the manufacturer, unless they know or should know that the manufacturer does not have a reasonable basis for the claim. *Id.* § 460.19(e).

410. *See* Staff Report at 249–51, 258–59.

411. Georgia Governor's Office of Consumer Affairs, L/160.

412. *Id.*

413. *See* Staff Report at 257–58.

414. TRR § 460.19(c).

415. *Id.*

416. Staff Report at 261.

417. *Id.*

418. Insulation products manufactured in boardstock form are often used at a one-inch thickness. *Id.* at 262.

419. For example, the manufacturer could state the R-value per inch of the material varies between 3.0 at a one-inch thickness and 2.6 at a six-inch thickness. TRR § 460.20.

420. Staff Report at 142–43.

421. *Id.*

422. TRR § 460.21.

423. Staff Report at 140.

424. 16 CFR 14.9 (1978).

425. 2 CCH Trade Reg. Rep. ¶ 7569 (1971).

426. *Cf.* Statement of Basis and Purpose for Trade Regulation Rule Governing Proprietary Vocational and Home Study Schools, 43 Fed. Reg. 60786, 60808 (1978).

427. This exemption process is similar to that approved by the Commission in the recently-adopted Trade Regulation Rule Governing Proprietary Vocational and Home Study Schools, § 438.9 *See* 43 FR 60796, 60811 (1978).

428. The only exemption available to industry members is that available under § 18(g) of the FTC Act. Under this provision, an industry member whose peculiar circumstances warrant an exemption from the Rule may petition the Commission.

429. ASTM C177 and C518 cost, respectively, approximately $200 and $150 per test. Staff Report at 72, 75. These are the test methods that will be most widely used. The C236 test is more expensive than C177, but exact figures are not available. *See id.* at 78.

430. *See id.* at 208–09.

431. *See* notes 350–51 *supra.*

432. 16 CFR 701 *et seq.* (1978).

433. In the Vocational Schools Rule, all of the consumer notices were written in "plain English." 43 FR 60796, 60812 (1978). In addition, the recently-promulgated Octane Posting Rule marked the first instance in which an entire regulation was written in readily understandable language. 44 FR 19160 (1979).

Accordingly, the Commission amends Subchapter D, Trade Regulation Rules of 16 CFR, Chapter I, by adding a new Part 460 to read as follows:

PART 460—LABELING AND ADVERTISING OF HOME INSULATION

Sec.

460.1 What this regulation does.
460.2 What is home insulation.
460.3 Who is covered.
460.4 When the rules apply.
460.5 R-value tests.
460.6 "Representative thickness" testing.
460.7 Which test version to use.
460.8 R-value tolerances.
460.9 What test records you must keep.
460.10 How statements must be made.
460.11 Rounding off R-values.
460.12 Labels.
460.13 Fact sheets.
460.14 How retailers must handle fact sheets.
460.15 How installers must handle fact sheets.
460.16 What new home sellers must tell new home buyers.
460.17 What installers must tell their customers.
460.18 Insulation ads.
460.19 Savings claims.
460.20 R-value per inch claims.
460.21 Government claims.
460.22 Tax claims.
460.23 Other laws, rules, and orders.
460.24 Stayed or invalid parts.
Appendix A—Enforcement Policy Statement for Foreign Language Advertising.
Appendix B—Enforcement Policy Statement for Clear and Conspicuous Disclosures in Television Advertising.

Authority: 38 Stat. 717, as amended, 15 U.S.C. 41 et seq.

§ 460.1 What this regulation does.

This regulation deals with home insulation labels, fact sheets, ads, and other promotional materials in or affecting commerce, as "commerce" is defined in the Federal Trade Commission Act. If you are covered by this regulation, breaking any of its rules is an unfair and deceptive act or practice or an unfair method of competition under section 5 of that Act. You can be fined heavily (up to $10,000) each time you break a rule.

§ 460.2 What is home insulation.

Insulation is any material mainly used to slow down heat flow. It may be mineral or organic, fibrous, cellular, or reflective (aluminum foil). It may be in rigid, semirigid, flexible, or loose-fill form. Home insulation is for use in old or new homes, condominiums, cooperatives, apartments, modular homes, or mobile homes. It does not include pipe insulation. It does not include any kind of duct insulation except for duct wrap.

§ 460.3 Who is covered.

You are covered by this regulation if you are a member of the home insulation industry. This includes individuals, firms, partnerships, and corporations. It includes manufacturers, distributors, franchisors, installers, retailers, utility companies, and trade associations. Advertisers and advertising agencies are also covered. So are labs doing tests for industry members. If you sell new homes to consumers, you are covered.

§ 460.4 When the rules apply.

You must follow these rules each time you import, manufacture, distribute, sell, install, promote, or label home insulation. You must follow them each time you prepare, approve, place, or pay for home insulation labels, fact sheets, ads, or other promotional materials for consumer use. You must also follow them each time you supply anyone covered by this regulation with written information that is to be used in labels, fact sheets, ads, or other promotional materials for consumer use. Testing labs must follow the rules unless the industry members tells them, in writing, that labels, fact sheets, ads, or other promotional materials for home insulation will not be based on the test results.

§ 460.5 R-value tests.

R-values measure resistance to heat flow. R-values given in labels, fact sheets, ads, or other promotional materials must be based on tests done under the methods listed below. They were designed by the American Society of Testing and Materials (ASTM).

The test methods are:

(a) All types of insulation except aluminum foil must be tested with ASTM C177, C518, or C236. If the "calibrated hot box" becomes an ASTM standard test method, it can also be used. The tests must be done on the insulation material alone (excluding any air spaces). The tests must be done at a mean temperature of 75° Fahrenheit.

(1) For polyurethane, polyisocyanurate, and extruded polystyrene, the tests must be done on samples that fully reflect the effect of aging on the product's R-value. To age the sample, follow the procedure in paragraph 4.6.4 of GSA Specification HH–I–530A, or another reliable procedure.

(2) For cellulose, the tests must be done at the settled density determined under GSA Specification HH–I–515D.

(3) For loose-fill mineral wool, the tests must be done on samples that fully reflect the effect of settling on the product's R-value. When a settled density procedure becomes part of a final GSA Specification for loose-fill mineral wool, the tests must be done at the settled density determined under the GSA Specification.

(b) Aluminum foil systems with more than one sheet must be tested with ASTM C236 (or the calibrated hot box). The tests must be done at a mean temperature of 75° Fahrenheit, with a temperature differential of 30° Fahrenheit.

(c) Single sheet systems of aluminum foil must be tested with ASTM E408 or another test method that provides comparable results. This tests the emissivity of the foil—its power to radiate heat. To get the R-value for a specific emissivity level, air space, and direction of heat flow, use the tables in the most recent edition of the American Society of Heating, Refrigerating, and Air-Conditioning Engineers' (ASHRAE) Handbook. You must use the R-value shown for 50° Fahrenheit, with a temperature differential of 30° Fahrenheit.

(d) For insulation materials with foil facings, you must test the R-value of the material alone (excluding any air spaces) under the methods listed in subsection (a). You can also determine the R-value of the material in conjunction with an air space. You can use one of two methods to do this:

(1) You can test the system, with its air space, under ASTM C236 (or the calibrated hot box). If you do this, you must follow the rules in subsection (a) on temperature, aging, and settled density.

(2) You can add up the tested R-value of the material and the R-value of the air space. To get the R-value for the air space, you must follow the rules in subsection (c).

§ 460.6 "Representative thickness" testing.

All tests except aluminum foil tests must be done at a representative thickness for every thickness shown in a label, fact sheet, ad, or other promotional material. "Representative thickness" means a thickness at which the R-value per unit will vary no more than plus or minus 2% with increases in thickness. However, if the thickness shown in your label, fact sheet, ad, or promotional material is less than the representative thickness, then you can test the insulation at the thickness shown.

§ 460.7 Which test version to use.

Use the version of the ASTM test method that was in effect when this regulation was promulgated. If ASTM changes a test method, the new version will automatically replace the old one in these rules 90 days after ASTM first publishes the change. However, the Commission's staff or a person affected by the change can petition the

Commission during the 90-day period not to adopt the change or to reopen the proceeding to consider it further.

§ 460.8 R-value tolerances.

If you are an industry member, the R-value of any insulation you sell cannot be more than 10% below the R-value shown in a label, fact sheet, ad, or other promotional material for that insulation. However, if you are not a manufacturer, you can rely on the R-value data given to you by the manufacturer, unless you know or should know that the data is false or not based on the proper tests.

§ 460.9 What test records you must keep.

Manufacturers and testing labs must keep records of each item of information in the "Report" section of the ASTM test method that is used for a test. They must also keep the following records:

(a) The name and address of the testing lab that did each test.

(b) The date of each test.

(c) For manufacturers, the date each test report was received from a lab. For labs, the date each test report was sent to a manufacturer.

(d) For extruded polystyrene, polyurethane, and polyisocyanurate, the age (in days) of the specimen that was tested.

(e) For aluminum foil, the emissivity level that was found in the test.

Manufacturers who own their own testing labs need not keep records of the information in subsection (c).

Keep these records for at least three years. If the documents show proof for your claims, the three years will begin again each time you make the claim. Federal Trade Commission staff members can check these records at any time, but they must give you reasonable notice first.

§ 460.10 How statements must be made.

All statements called for by this regulation must be made clearly and conspicuously. Among other things, you must follow the Commission's Enforcement Policy Statement for Foreign Language Advertising (July 24, 1973) (Appendix A). For TV ads, you must follow the Commission's Enforcement Policy Statement for Clear and Conspicuous Disclosures in Television Advertising (October 21, 1970) (Appendix B). However, only the quoted statements required by §§ 460.18(a) and 460.19(b) must be made in a voice-over. Both of the above documents are in the Appendix to this regulation.

§ 460.11 Rounding off R-values.

R-values shown in labels, fact sheets, ads, or other promotional materials must be rounded to the nearest tenth. However, R-values of 10 or more may be rounded to the nearest whole number.

§ 460.12 Labels.

If you are a manufacturer, you must label all packages of your insulation. The labels must contain:

(a) The type of insulation.

(b) A chart showing these items:

(1) For mineral fiber batts and blankets: the R-value, length, width, thickness, and square feet of insulation in the package.

(2) For all loose-fill insulation except cellulose: the minimum thickness, maximum net coverage area, and minimum weight per square foot at R-values of 11, 19, and 22. You must also give this information for any additional R-values you list on the chart. Labels for these products must state the minimum net weight of the insulation in the package.

(3) For loose-fill cellulose insulation: the minimum thickness, maximum net coverage area, number of bags per 1,000 square feet, and minimum weight per square foot at R-values of 13, 19, 24, 32, and 40. You must also give this information for any additional R-values you list on the chart. Labels for this product must state the minimum net weight of the insulation in the package.

(4) For boardstock: the R-value, length, width, and thickness of the boards in the package; and the square feet of insulation in the package.

(5) For aluminum foil: the number of foil sheets; the number and thickness of the air spaces; and the R-value provided by that system when the direction of heat flow is up, down, and horizontal. You can show the R-value for only one direction of heat flow if you clearly and conspicuously state that the foil can only be used in that application.

(6) For insulation materials with foil facings, you must follow the rule that applies to the material itself. For example, if you manufacture boardstock with a foil facing, follow subsection (4). You can also show the R-value of the insulation when it is installed in conjunction with an air space. This is its "system R-value." If you do this, you must clearly and conspicuously state the conditions under which the system R-value can be attained.

(7) For air duct insulation: the R-value, length, width, thickness, and square feet of insulation in the package.

(c) The following statement: "R means resistance to heat flow. The higher the R-value, the greater the insulating power."

(d) If installation instructions are included on the label or with the package, add this statement: "To get the marked R-value, it is essential that this insulation be installed properly. If you do it yourself, follow the instructions carefully."

(e) If no instructions are included, add this statement: "To get the marked R-value, it is essential that this insulation be installed properly. If you do it yourself, get instructions and follow them carefully. Instructions do not come with this package."

§ 460.13 Fact sheets.

If you are a manufacturer, you must give retailers and installers fact sheets for the insulation products you sell to them. Each sheet must contain what is listed here. You can add any disclosures that are required by state or local laws, rules, and orders, unless they are inconsistent with the provisions of this regulation. Do not add anything else.

Each fact sheet must contain these items:

(a) The name and address of the manufacturer. It can also include a logo or other symbol that the manufacturer uses.

(b) A heading: "This is ———— insulation." Fill in the blank with the type and form of your insulation.

(c) The heading must be followed by a chart:

(1) If section 460.12(b) requires a chart for your product's label, you must use that chart. For foamed-in-place insulations, you must show the R-value of your product at 3½ inches. You can also show R-values at other thicknesses.

(2) You can put the charts for similar products on the same fact sheet. For example, if you sell insulation boards or batts in three different thicknesses, you can put the label charts for all three products on one fact sheet. If you sell loose-fill insulation in two different bag sizes, you can put both coverage charts on one fact sheet, as long as you state which coverage chart applies to each bag size.

(d) For urea-based foam insulation, the chart must be followed by this paragraph:

"Foam insulation shrinks after it is installed. This shrinkage may significantly reduce the R-value you get."

However, you can lower your product's R-value to account for shrinkage. To do this, you must have reliable scientific proof of the extent of shrinkage for your product and of its effect on R-value. If you lower your product's R-value, you need not make the above statement.

(e) For air duct insulation, the chart must be followed by this statement:

"The R-value of this insulation varies depending on how much it is compressed during installation."

(f) After the chart and any statement dealing with the specific type of insulation, ALL fact sheets must carry this statement, boxed, in 12-point type:

Read This Before You Buy

What You Should Know About R-values

The chart shows the R-value of this insulation. R means resistance to heat flow. The higher the R-value, the greater the insulating power. Compare insulation R-values before you buy.

There are other factors to consider. The amount of insulation you need depends mainly on the climate you live in. Also, your fuel savings from insulation will depend upon the climate, the type and size of your house, the amount of insulation already in your house, and your fuel use patterns and family size. If you buy too much insulation, it will cost you more than what you'll save on fuel.

To get the marked R-value, it is essential that this insulation be installed properly.

§ 460.14 How retailers must handle fact sheets.

If you sell insulation to do-it-yourself customers, you must have fact sheets for the insulation products you sell. You must make the fact sheets available to your customers. You can decide how to do this, as long as your insulation customers are likely to notice them. For example, you can put them in a display, and let customers take copies of them. You can keep them in a binder at a counter or service desk, and have a sign telling customers where the fact sheets are.

§ 460.15 How installers must handle fact sheets.

If you are an installer, you must have fact sheets for the insulation products you sell. Before customers agree to buy insulation from you, you must show them the fact sheet(s) for the type(s) of insulation they want. You can decide how to do this. For example, you can give each customer a copy of the fact sheet(s). You can keep the fact sheets in a binder, and show customers the binder before they agree to buy.

§ 460.16 What new home sellers must tell new home buyers.

If you are a new home seller, you must put the following information in every sales contract: the type, thickness, and R-value of the insulation that will be installed in each part of the house. There is an exception to this rule. If the buyer signs a sales contract before you know what type of insulation will be put in the house, or if there is a change in the contract, you can give the buyer a receipt stating this information as soon as you find out.

§ 460.17 What installers must tell their customers.

If you are an installer, you must give your customers a contract or receipt for the insulation you install. For all insulation except loose-fill and aluminum foil, the receipt must show the coverage area, thickness, and R-value of the insulation you installed. For loose-fill, the receipt must show those three items plus the number of bags used. For aluminum foil, the receipt must show the number and thickness of the air spaces, the direction of heat flow, and the R-value. The receipt must be dated and signed by the installer. To figure out the R-value of the insulation, use the data that the manufacturer gives you. Do not multiply the R-value for one inch by the number of inches you installed. If you put insulation in more than one part of the house, put the data for each part on the receipt. You can do this on one receipt, as long as you do not add up the coverage areas or R-values for different parts of the house.

§ 460.18 Insulation ads.

(a) If your ad gives an R-value, you must give the type of insulation and the thickness needed to get that R-value. Also, add this statement explaining R-values: "The higher the R-value, the greater the insulating power. Ask your seller for the fact sheet on R-values."

(b) If your ad gives a price, you must give the type of insulation, the R-value at a specific thickness, the statement explaining R-values in subsection (a), and the coverage area for that thickness. If you give the price per square foot, you do not have to give the coverage area.

(c) If your ad gives the thickness of your insulation, you must give its R-value at that thickness and the statement explaining R-values in subsection (a).

(d) If your ad compares one type of insulation to another, the comparison must be based on the same coverage areas. You must give the R-value at a specific thickness for each insulation, and the statement explaining R-values in subsection (a). If you give the price of each insulation, you must also give the coverage area for the price and thickness shown. However, if you give the price per square foot, you do not have to give the coverage area.

(e) If your ad gives the R-value of urea-based foam insulation, you must add this statement: "Foam insulation shrinks after it is installed. This shrinkage may significantly reduce the R-value you get." However, you can lower your product's R-value to account for shrinkage. To do this, you must have reliable scientific proof of the extent of shrinkage for your product and of its effect on R-value. If you lower your product's R-value, you need not make the above statement.

§ 460.19 Savings claims.

(a) If you say or imply in your ads, labels, or other promotional materials that insulation can cut fuel bills or fuel use, you must have a reasonable basis for the claim. For example, if you say that insulation can "slash" or "lower" fuel bills, or that insulation "saves money," you must have a reasonable basis for the claim. Also, if you say that insulation can "cut fuel use in half," or "lower fuel bills by 30%," you must have a reasonable basis for the claim.

(b) If you say or imply in your ads, labels, or other promotional materials that insulation can cut fuel bills or fuel use, you must make this statement about savings: "Savings vary. Find out why in the seller's fact sheet on R-values. Higher R-values mean greater insulating power."

(c) If you say or imply that a combination of products can cut fuel bills or use, you must have a reasonable basis for the claim. You must make the statement about savings in subsection (b). Also, you must list the combination of products used. They may be two or more types of insulation; one or more types of insulation and one or more other insulating products, like storm windows or siding; or insulation for two or more parts of the house, like the attic and walls. You must say how much of the savings came from each product or location. If you cannot give exact or approximate figures, you must give a ranking. For instance, if your ad says that insulation and storm doors combined to cut fuel use by 50%, you must say which one saved more.

(d) If your ad or other promotional material is covered by section 460.18(a), (b), (c), or (d), and also makes a savings claim, you must follow the rules in §§ 460.18 and 460.19. However, you need not make the statement explaining R-value in § 460.18(a).

(e) Manufacturers are liable if they do not have a reasonable basis for their savings claims before the claim is made. If you are not a manufacturer, you are liable only if you know or should know that the manufacturer does not have a reasonable basis for the claim.

(f) Keep records of all data on savings claims for at least three years. For the records showing proof for claims, the three years will begin again each time you make the claim. Federal Trade Commission staff members can check these records at any time, but they must give you reasonable notice first.

§ 460.20 R-value per inch claims.

In labels, fact sheets, ads, or other promotional materials, do not give the R-value for one inch or the "R-value per inch" of your product. There are two exceptions:

(1) You can do this if you suggest using your product at a one-inch thickness.

(2) You can do this if actual test results prove that the R-values per inch of your product does not drop as it gets thicker.

You can list a range of R-value per inch. If you do, you must say exactly how much the R-value drops with greater thickness. You must also add this statement: "The R-value per inch of this insulation varies with thickness. The thicker the insulation, the lower the R-value per inch."

§ 460.21 Government claims.

Do not say or imply that a government agency uses, certifies, recommends, or otherwise favors your product unless it is true. Do not say or imply that your insulation complies with a governmental standard or specification unless it is true.

§ 460.22 Tax claims.

Do not say or imply that your product qualifies for a tax benefit unless it is true.

§ 460.23 Other laws, rules, and orders.

(a) If an outstanding FTC Cease and Desist Order applies to you but differs from the rules given here, you can petition to amend to order.

(b) State and local laws and regulations that are inconsistent with, or frustrate the purposes of, the provisions of this regulation are preempted. However, a state or local government may petition the Commission, for good cause, to permit the enforcement of any part of a state or local law or regulation that would be preempted by this section.

(c) The Commission's three-day cooling-off rule stays in force.

§ 460.24 Stayed or invalid parts.

If any part of this regulation is stayed or held invalid, the rest of it will stay in force.

Appendix A—Enforcement Policy Statement for Foreign Language Advertising

Title 16—Commercial Practices

Chapter I—Federal Trade Commission

PART 14—ADMINISTRATIVE INTERPRETATIONS, GENERAL POLICY STATEMENTS, AND ENFORCEMENT POLICY STATEMENTS

§ 14.9 Requirements concerning clear and conspicuous disclosures in foreign language advertising and sales materials.

The Federal Trade Commission has noted that, with increasing intensity, advertisers are making special efforts to reach foreign language-speaking consumers. As part of this special effort, advertisements, brochures and sales documents are being printed in foreign languages. In recent years the Commission has issued various cease-and-desist orders as well as rules, guides and other statements, which require affirmative disclosures in connection with certain kinds of representations and business activities. Generally, these disclosures are required to be "clear and conspicuous." Because questions have arisen as to the meaning and application of the phrase "clear and conspicuous" with respect to foreign language advertisements and sales materials, the Commission deems it appropriate to set forth the following enforcement policy statement:

(a) Where cease-and-desist orders as well as rules, guides and other statements require "clear and conspicuous" disclosure of certain information, that disclosure must be in the same language as that principally used in the advertisements and sales materials involved.

(b) Any respondent who fails to comply with this requirement may be the subject of a civil penalty proceeding for violating the terms of a Commission cease-and-desist order.

(Sec. 5, 38 Stat. 719, as amended; 15 U.S.C. 45)

[38 FR 21494, Aug. 9, 1973]

Appendix B—Enforcement Policy Statement for Clear and Conspicuous Disclosures in Television Advertising

.09 "Clear and conspicuous" disclosure.—The FTC issued an enforcement policy statement setting forth the standards it considers in determining whether, in fact, an affirmative disclosure in a television commercial is "clear and conspicuous." The FTC explained that in recent years it has issued various opinions, orders and trade regulation rules concerned with the need for affirmative disclosures in connection with various kinds of representations. In making a determination, the FTC said that it will take into consideration all the technical factors, such as the size of letters and the duration of disclosure, used in presenting the disclosure to a television audience, as well as the substance of the individual disclosure. The following standards should be met for a television disclosure to be deemed "clear and conspicuous": (a) the disclosure should be presented simultaneously in both the audio and video portions of the television advertisement; (b) the video portion of the disclosure must contain letters of sufficient size so that it can be easily seen and read on all television sets, regardless of picture tube size; (c) the video portion of the disclosure should contain letters of a color or shade that readily contrast with the background, and the background should consist of only one color or shade; (d) no other sounds, including music, should occur during the audio portion of the disclosure; (e) the video portion of the disclosure should appear on the screen for a sufficient duration to enable it to be completely read by the viewer; and (f) the audio and video portions of the disclosure should immediately follow the specific sales representations to which they relate and should occur each time the representation is presented during the advertisement; in cases where a disclosure is required, but is not linked to a specific representation, it should appear in immediate conjunction with the major sales theme of the advertisement. Television advertisers should also consider the audience to whom the disclosure is directed in order to assure that persons (such as children) can understand the full meaning of the disclosure. If securing this understanding is impractical, then the advertisements containing such representations should not be used on television. *FTC Statement of Enforcement Policy*, October 21, 1970.

Trade Regulation Reports, Volume 2, ¶7569 at 12, 166 (1971)

By direction of the Commission dated August 10, 1979.

Loretta Johnson,

Acting Secretary.

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